Fifth National Report on the Implementation of the Convention on Biological Diversity

Reporting Party: REPUBLIC OF MALTA

Report drawn up by: Malta Environment and Planning Authority

2014

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Executive Summary
Main messages and key findings of the Report

This fifth national report (5NR) fulfils Malta's reporting obligations as a Party to the Convention on Biological Diversity (Article 26 on reports of the Convention text)[1]. Malta has followed the Fifth National Report Guidelines and Resource Manual[2] when drawing up its national report, which is a continuation of Malta's fourth national report (4NR). In this respect, Malta's 5NR contains updated information while it attempts to refrain from duplicating information submitted in the previous report.

Why is biodiversity important for Malta?

Biodiversity drives the functioning of the different ecosystems in the country and subsequently influences the various life supporting services upon which human well-being and various sectors depend. More detail is provided in Section 1.2 of Malta's 5NR. In order to assess how citizens in Malta value biodiversity in the country, a preliminary questionnaire-based survey was undertaken by the Malta Environment and Planning Authority (MEPA) at the beginning of 2014. Results from 166 responses reveal that biodiversity in Malta is valued for provisioning services (namely the provision of clear air and water), regulating services (in particular pollination and soil formation and fertility) and for cultural services, mainly outdoor recreation. Most importantly respondents to the questionnaire value biodiversity for their overall wellbeing and also link the importance of biodiversity for sustainable development. The intrinsic, existence and bequest values of biodiversity are also well recognised by respondents to the questionnaire. More detail is provided in Sub-section 1.2.2 of Malta's 5NR. As a small island state, Malta is also greatly dependent on the marine environment both for marketed and non-marketed activities. This has indeed been substantiated by the findings of an economic and social analysis (ESA) of the direct use made of the marine environment. The ESA was carried out in line with the requirements of the Marine Strategy Framework Directive (MSFD – Directive 2008/56/EC). More detail is provided in Sub-section 1.2.3 of Malta's 5NR.

What major changes have taken place in the status and trends of biodiversity in Malta?

Changes in the status and trends of biodiversity in Malta are mainly assessed in line with the requirements of the Habitats Directive (Article 17 of Directive 92/43/EEC) and the Birds Directive (Article 12 of Directive 2009/147/EC), respectively.

Since its 4NR, Malta carried out its second assessment of the conservation status of species and habitats of European Community Importance that are found in Malta in compliance with reporting obligations of the Habitats Directive. Malta's report for the interim 2007-2013 provides an overall positive picture since Malta has remained in line with the objectives of the Directive. The conservation status of those habitats and species as reported in 2013 has generally remained unchanged or improved when compared to the 2007 report. Changes are normally due to improved knowledge, and seldom in view of genuine changes. Nevertheless, it reveals the need to focus more attention on certain aspects, especially when considering the marine environment. Action has already been taken in this regard when noting that EU-funded projects are catering for at least some of the prevailing gaps. Other targeted research would also be considered.

[1] http://www.cbd.int/convention/articles/default.shtml?a=cbd-26
[2] http://www.cbd.int/nr5/default.shtml

With regard to Maltese native species listed in the Habitats Directive, in 2013 40% were considered as having a favourable status, up from 20% in 2007. Meanwhile, 15% of species (mostly marine) listed in the Directive and found in Malta remain with an unknown status; this value however decreased considerably from the 36% in 2007. 45% of species assessed in 2013 have hence been indicated as having an unfavourable status, with the figure being similar to the 44% in 2007. Despite the similarity in the overall percentage of species with an unfavourable conservation status, it is worth noting that the percentage of species with unfavourable bad status has almost halved from 2007 (15%) to 2013 (8%); the rest are considered to be at an unfavourable inadequate status. More detail is provided in Sub-section 1.3.1 of Malta's Fifth National Report (5NR). On the other hand, when considering habitats, there is an overall improvement in conservation status. 43% of habitats were assessed as having a favourable conservation status, up from 6% in 2007. This reflected the decline in habitats assessed as having an unfavourable status to 57% in 2013 from 65% in 2007 , and the fact that no habitats had an unknown status in 2013 (29% in 2007). More detail is provided in Sub-section 1.3.4 of Malta's 5NR.

Malta's 2013 report in compliance with the requirements of Article 12 of the Birds Directive adopts the new reporting system. This includes a general report together with species datasheets that report on the size and trends of individual bird species' populations and distributions for wintering and breeding birds. The majority of the birds analysed have undergone a population increase both during the short and long-term interim. Whilst a number of increases are due to the recent colonisation of new species, some of the increases are not necessarily due to genuine population changes but may only be the consequence of an improved sampling effort/diversification in method. More detail is provided in Sub-section 1.3.2 of Malta's 5NR.

What are the main pressures and threats to biodiversity?

Malta's biodiversity continues to experience various pressures (now) and threats (in the future). These include amongst others, habitat fragmentation, degradation and destruction due to land-use change, overexploitation, the introduction and spread of invasive alien species and pollution. More detail is provided in Section 1.5 - Sub-section 1.5.1 of Malta's 5NR. Pressures and threats that are specific to terrestrial and marine biodiversity, respectively, are mentioned in the context of species and habitats covered by the EC Habitats Directive.

What are the impacts of the changes in biodiversity for ecosystem services and the socioeconomic and cultural implications of these impacts?

Biodiversity in Malta is important for provisioning, regulating, supporting and cultural services. These may be altered as a result of human action as well as changes in environmental conditions. Direct drivers of biodiversity loss bring about changes in ecosystem services (such as soil erosion and loss of fertility, loss of aesthetic value and scenery in the countryside, pollution, climate change-related risks and hazards, just to mention a few). Such changes have socio-economic and cultural implications such as on health, on tourism, on outdoor recreation and on agriculture productivity. More detail is provided in Sub-section 1.2.1 of Malta's 5NR.

What are the biodiversity targets set by Malta? Has Malta's NBSAP incorporated the Global Aichi Targets to serve as an effective instrument to mainstream biodiversity? What progress has been made by Malta towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets?

As seen in Section 2.1 of Malta's 5NR, 19 national biodiversity targets have been adopted in 2012 as part of Malta's National Biodiversity Strategy and Action Plan (NBSAP). These national targets are aligned with the Aichi Targets while reflecting national contexts and priorities. The national targets are

similarly grouped as seen in the CBD's Global Biodiversity Strategic Plan 2011-2020. The status of national progress towards the 20 Aichi target (and related national targets) is summarised Table 1. While excellent progress is noted for 10% of the targets (2 out of 20), Malta reports good progress for the majority of targets, that is 85% of the targets (17 out of 20). In the latter case further action is required in order to successfully achieve the targets in question. In relation to the national target adopted for Aichi Target 5, the percentage cover of "forests and semi-natural areas" recorded in 2012 has decreased below the CORINE land cover data of 2006. More detail in this regard is provided in Section 3.1 of Malta's 5NR.

Table 1 - Malta's Progress in Efforts to Achieve the Global Aichi Biodiversity Targets		
	Legend: ☺ Excellent progress made in reaching the target, which is near being met 😐 Good progress made but further action is required to achieve the target ☹ Inadequate/insufficient progress due to action not yet being made or action still very early in its implementation	**Progress**
1	**Aichi Target**: By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably. *National Target: By 2020, more than 55% of Maltese citizens are aware of the term "biodiversity", know what it means and also know what steps they can take to conserve and use biodiversity in a sustainable manner.*	😐
2	**Aichi Target**: By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems. *National Target: By 2020, the values of biodiversity and ecosystem services, and the opportunities derived from their conservation and sustainable use, are recognised and integrated in national policies (including national accounting, as appropriate), as well as decision-making and planning processes.*	😐
3	**Aichi Target**: By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions. *National Target: By 2020, positive incentives for conservation and sustainable use of biodiversity are increasingly promoted. Malta cooperates in efforts to address environmentally harmful subsidies.*	😐
4	**Aichi Target**: By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits. *National Target: By 2020, main sectors that are beneficiaries of ecosystem services have incorporated biodiversity concerns into their sectoral and cross-sectoral plans, policies and programmes, as appropriate.*	😐
5	**Aichi Target**: By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced. *National Target: By 2020, the rate of loss of natural and semi-natural habitats of conservation value is at least halved, and degradation and fragmentation is significantly reduced. The percentage cover of "forests and semi-natural areas" has not decreased below the CORINE land cover data of 2006.*	☹
6	**Aichi Target**: By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are	😐

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	in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits. *National Target: By 2020, pressure on vulnerable ecosystems through overexploitation of biological resources is reduced by adopting sustainable practices.*	
7	**Aichi Target**: By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity. *National Target: By 2020, areas under agriculture and aquaculture are managed sustainably, ensuring the conservation of biodiversity.*	😐
8	**Aichi Target**: By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity. *National Target: By 2020, the implementation of effective measures to address pollution (including from excess nutrients) in line with the requirements of established legislation, is showing signs of a decreasing trend in current pollution levels, where feasible.*	😐
9	**Aichi Target**: By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment. *National Target: By 2020, measures are in place to prevent, in so far as practical, the introduction and establishment of new invasive non-native species, while those that are established are identified and prioritised for eradication or control, where feasible.*	😐
10	**Aichi Target**: By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning. *National Target – See target on climate change below.*	😐
11	**Aichi Target**: By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes. *National Target: By 2020, Malta's 13% land area covered by terrestrial Natura 2000 sites is maintained, and Malta's sufficiency in the designation of key marine biodiversity areas is improved through a representative network of marine protected areas.*	☺
12	**Aichi Target**: By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained. *National Target: By 2020, the risk of local extirpation of known threatened species has been reduced, with 30% of the species of European Community Importance in the Maltese territory having a favourable or improved conservation status.*	☺
13	**Aichi Target**: By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimising genetic erosion and safeguarding their genetic diversity. *National Target: By 2020, the status of crop and livestock genetic diversity in agricultural ecosystems and of wild relatives has been safeguarded and improved, where feasible.*	😐

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14	**Aichi Target**: By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable. *National Target: By 2020, vulnerable ecosystems that provide essential services are safeguarded, with at least 15% of degraded ecosystems restored, while 20% of the habitats of European Community Importance in the Maltese territory have a favourable or improved conservation status.*	😐
15	**Aichi Target**: By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification. *National Target: By 2020, the impacts of climate change on ecosystems have been reduced, in so far as feasible and, mitigation and adaptation responses to climate change that support and conserve biodiversity have been agreed and are being implemented*	😐
16	**Aichi Target**: By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation. *National Target: By 2020, access to national genetic resources is regulated through a National Regime on Access and Benefit Sharing (ABS).*	😐
17	**Aichi Target**: By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan. National Target: *By 2020, Malta is implementing an effective and participatory national biodiversity strategy and action plan (NBSAP).*	😐
18	**Aichi Target**: By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels. *National Target: By 2020, the contribution of local communities/ entities to the sustainable management of biodiversity is recognised and enhanced.*	😐
19	**Aichi Target**: By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied. *National Target: By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved and applied.*	😐
20	**Aichi Target**: By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilisation, should increase substantially from the current levels.	😐

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	National Target: By 2020, capacity for national implementation of the Convention on Biological Diversity, other related Multilateral Environmental Agreements (MEAs) and EU obligations, has increased from current levels.	

What actions has Malta taken to implement the Convention since the fourth report and what have been the outcomes of these actions?

The main action to implement the Convention since the fourth report is Malta's finalisation and adoption of its National Biodiversity Strategy and Action Plan (NBSAP) entitled "Working hand-in-hand with Nature". A brief description is provided in Section 2.2 of Malta's 5NR. Significant progress is also noted in the context of awareness and educational events, greater uptake of research projects and use of funds, strengthening of the legal regime affording protection to species via various amendments to pieces of legislation, momentum in the implementation of the management planning process for terrestrial protected areas falling under the Natura 2000 Network as well as further designations in the marine environment, and continued mainstreaming of biodiversity in key sectoral policy instruments, such as the National Environment Policy. More detail is provided in Section 2.4 of Malta's 5NR.

How effectively has biodiversity been mainstreamed into relevant sectoral and cross-sectoral strategies, plans and programmes?

Biodiversity considerations are effectively integrated in Malta's National Environment Policy, the National Strategy on Adaptation for Climate Change and the National Tourism Policy (2012-2016). The formulation of policy to implement EU Directives, such as the Water Framework Directive and Marine Strategy Framework Directive, that adopt an ecosystem approach, also contributes to biodiversity mainstreaming as seen in Malta's First Water Catchment Management Plan (the second is due in 2015) and also the completed exercise of defining targets for achieving good environment status in the marine environment under the MSFD framework, which includes biodiversity-related descriptors. While biodiversity is also fully integrated in the Sustainable Development Strategy for Malta, the latter strategy shall be revised in line with requirements of the Sustainable Development Act (Chapter 521 of the Laws of Malta). Recent and forthcoming sectoral policies that are key instruments for continued biodiversity mainstreaming include the Aquaculture Strategy for the Maltese Islands – Towards Sustainability, Malta's Rural Development Programme 2014-2020, the Integrated Maritime National Strategy, and the Strategic Plan for the Environment and Development. Such instruments are essential to goals of biodiversity mainstreaming in that they address sectors that can pose significant pressures on and threats to biodiversity. Malta continues to apply environmental assessments (EIAs, SEAs and AAs) to assess the potential impacts of plans, programmes and projects (PPPs) development on the environment, including on species and habitats, as well as protected areas, such as Natura 2000 sites, in order to foresee and hence prevent/mitigate such impacts as well as explore any alternatives. More detail is provided in Sections 2.7, 2.8 and 2.9 of Malta's 5NR.

How fully has Malta's NBSAP been implemented?

An assessment of the extent to which Malta's NBSAP has been implemented measure-by-measure is provided in Section 2.12 of Malta's 5NR. Progress on Malta's implementation of the measures called for in the NBSAP is summarised in Table 2. Out of 80 measures, excellent progress is reported for 14

measures (18%), good progress is reported for 47 measures (58%) while inadequate/ insufficient/limited progress is reported for 5 measures (6%). Progress is deemed not applicable at this stage for 14 measures (18%) for which the timeline for implementation is yet to commence.

This first review process of Malta's implementation of its NBSAP has drawn attention to the need to amend the timelines for seven NBSAP measures. This need is deemed justified since it better reflects the ongoing nature of implementation of that particular measure. In the case of NBSAP measure FB1 the timeline is being extended to reflect the timing under the CBD framework.

Table 2 - Malta's Progress in Efforts to Achieve the Global Aichi Biodiversity Targets
Legend:
☺ Excellent progress made in translating the measure into action;
😐 Good progress made but further action is/initiatives are required to implement the measure;
☹ Inadequate/insufficient/limited progress due to action not yet being made or action still very early in its implementation; and
NA – Not assessed - Assessment of progress will be carried out in future reviews since the implementation timeline for that particular NBSAP measure is yet to commence.

Theme	Code of NBSAP Measure	Progress
1: Genetic Resources and Diversity	GR1 (plant and animal genetic resources for food and agriculture)	😐
	GR2 (genetic diversity of endemic species)	😐
	GR3 (access and benefit sharing)	😐
2: Species and Habitats	SH1 (ecosystems and their services)	☹
	SH2 (conservation of species and habitats)	😐
	SH3 (species reintroduction and reinforcement)	😐
	SH4 (species and habitat action plans)	😐
	SH5 (strict protection regime for protected species)	😐
	SH6 (habitat management and restoration guidelines)	NA
	SH7 (urban biodiversity)	😐
	SH8 (landscaping guidelines)	☹
3: Ecological Network of Protected Areas	EN1 (national ecological network)	☺
	EN2 (management planning process)	☺
	EN3 (ecological corridors)	😐
	EN4 (green infrastructure)	😐
	EN5 (zoning system in protected areas)	NA
	EN6 (protected area governance)	😐
	EN7 (protected area management effectiveness)	NA
4: Biological Introductions	BI1 (national information and early warning system)	😐
	BI2 (national strategy on invasive alien species - IAS)	😐
	BI3 (IAS management and control)	😐
	BI4 (national codes of conduct)	☹
	BI5 (biosafety and genetically modified organisms)	😐
5: Sustainable Use of Biological Resources	BR1 (native plant stock)	NA
	BR2 (maximum sustainable yield of fish stocks)	NA
	BR3 (sustainability of plant-based products)	☹
	BR4 (sustainable exploitation of CITES-listed species)	☺
	BR5 (regulation of capture and killing)	😐
6: Sustainable Use of Natural Resources: Soil, Water and Land	NR1 (high nature value farmland and organic farming)	😐
	NR2 (soil conservation and desertification)	😐
	NR3 → NR3 (sustainable use of pesticides and integrated pest management)	😐

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Theme	Code of NBSAP Measure	Progress
	NR4 → NR4 (protection of groundwaters)	😐
	NR5 (rainwater harvesting)	NA
	NR6 (integrated water resources management)	😐
7: Climate Change	CC1 (linkages between climate change and biodiversity)	😐
	CC2 (adaptive capacity of species and habitats)	NA
	CC3 (vulnerability analyses)	😐
	CC4 (forestation for climate change mitigation)	☺
	CC5 → CC5 (linkages between inland water ecosystems and climate change)	😐
8: Pro-biodiversity Businesses and a Green Economy	BE1 (private sector voluntary green initiatives in support of biodiversity)	NA
	BE2 → BE2 (eco-efficient facilities)	😐
	BE3 (economic valuation of ecosystem services)	NA
9: Financing Biodiversity	FB1 → FB1 (national biodiversity financial plan)	😐
	FB2 (market-based instruments)	😐
10: Communication, Education and Public Awareness	PA1 (national biodiversity campaign)	☺
	PA2 (national biodiversity database and updated red lists)	NA
	PA3 (Natura 2000 communication campaign)	☺
11: Participatory Conservation	PC1 (engaging citizens in conservation measures)	😐
	PC2 (Maltese farmers as stewards of agrobiodiversity and the countryside)	☺
	PC3 (biodiversity partnerships)	😐
	PC4 (action at sub-national/local level in support of biodiversity)	😐
12: Enforcement	EF1 (addressing constraints in enforcement)	😐
	EF2 (polluter pays principle and liability and redress)	😐
	EF3 (national enforcement directorate and ODZ illegalities)	☺
	EF4 (curbing environmental illegalities)	😐
13: Environmental Assessment	EA1 (implementation of environmental assessment procedures)	☺
	EA2 (biodiversity considerations in EA procedures)	☺
14: Research & Development	RD1 (interdisciplinary research and partnerships)	☺
	RD2 (know-how and best practice)	😐
	RD3 (areas and biodiversity beyond national jurisdiction)	😐
15: Biodiversity Monitoring	BM1 (national biodiversity monitoring strategy)	😐
	BM2 (national volunteer network and citizen science)	NA
16: Networking & Information Exchange	IE1 (national fora on environmental issues)	☺
	IE2 (interdepartmental information exchange and cooperation)	😐
	IE3 (bilateral and multilateral cooperation)	☺

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NA – Not assessed - Assessment of progress will be carried out in future reviews since the implementation timeline for that particular NBSAP measure is yet to commence.

Theme	Code of NBSAP Measure	Progress
17: Capacity Building	CB1 (creating an enabling environmental for national competent authorities)	😐
	CB2 (capacity building for site managers of protected areas)	NA
	CB3 (integrating environmental requirements in urban and rural landscaping)	☹
	CB4 → CB4 (filling gaps in taxonomic knowledge)	☺
	CB5 (strengthening scientific capacity)	NA
18: Other Sectoral Integration	SI1 → SI1 (green policies)	😐
	SI2 (rural development)	😐
	SI3 (cross-compliance)	😐
	SI4 (aquaculture)	😐
	SI5 (integrated coastal zone management and maritime spatial planning)	😐
	SI6 (land use and spatial planning)	😐
	SI7 (renewable energy)	😐
	SI8 (tourism)	😐
	SI9 (waste)	NA
	SI10 (risk reduction and preparedness)	😐

What lessons have been learnt from the implementation of the Convention in your country?

While efforts at addressing knowledge gaps on biodiversity in the Maltese Islands have increased in the past years, and important projects are ongoing in the marine realm, there is the increasing need to adopt a comprehensive monitoring strategy that not only targets species of EU Community Importance but also species of national importance. Although biodiversity considerations are increasingly being integrated in sectoral policies, plans and programmes, effective and timely conservation action to address pressures and threats as well as policy implementation on the ground is currently hindered due to resource constraints. The exercise of the detailed assessment and mapping of ecosystems and their services, which is yet to commence, will shed light on which areas warrant conservation action, including restoration as well as any considerations of deploying elements of green infrastructure. Those wildlife illegalities that are intercepted are duly penalised and fined in Maltese courts and the presence of enforcement officials in the countryside has doubled. Continued and strengthened coordination and cooperation between relevant entities is needed in order to curb such illegalities. Awareness of the importance of biodiversity and ways to safeguard it needs to be increased and enhanced further through participatory conservation and not only limited to the use of media. The NBSAP review process has shed light on which measures warrant further momentum at a national level in the coming years. It has also helped identify issues in the NBSAP that require refinement, such as timelines in order to reflect the need for continued action.

ABBREVIATIONS

4NR	Fourth National Report to the CBD
5NR	Fifth National Report to the CBD
ABNJ	Areas Beyond National Jurisdiction
AEI	Areas of Ecological Importance
AEM	Agri-environment measure
AFM	Armed Forces of Malta
Annex I Habitats	Habitats of Community Importance that are included in Annex I of Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora
ARPA	Agriculture and Rural Payments Agency
Article 12 Report	Report in line with the requirement of Article 12 of Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora
Article 17 Report	Report in line with the requirement of Article 17 of Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds
CAP	Common Agriculture Policy
CBD	Convention on Biological Diversity
CEER	Centre for Environmental Education and Research
CHM	Clearing House Mechanism
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLC	Corine Land Cover
CoGAP	Code of Good Agriculture Practice
COP	Conference of the Parties
DES	Directorate for Student Services
DFA	Department of Fisheries and Aquaculture
DOB	Department of Biology
DOI	Department of Information
EAFRD	European Agricultural Fund for Rural Development
EC	European Community
EDPA	Environment and Development Planning Act, 2010
EIA	Environment Impact Assessment
EMFF	European Maritime and Fisheries Fund
ERDF	European Regional Development Fund
ESA	Economic and Social Analysis
ESD	Education for Sustainable Development
FAS	Farm Advisory System
FLEGT	Forest Law Enforcement, Governance and Trade
GAEC	Good Agricultural and Environmental Condition
GHG	Greenhouse Gas
GI	Green Infrastructure
GMO	Genetically Modified Organism
GPP	Green Public Procurement
HNVF	High Nature Value Farmland
IAS	Invasive Alien Species
IBA	Important Bird Area
LEAF	Learning About Forests
LN	Legal Notice
LULUCF	Land Use, Land Use Change and Forestry
MARC	Malta Aquaculture Research Centre

MAT	Mutually Agreed Terms
MCAST	Malta College of Arts Science and Technology
MCCAA	Malta Competition and Consumer Affairs Authority
MCST	Malta Council for Science and Technology
MEA	Multilateral Environmental Agreement
MEDE	Ministry for Education and Employment
MEDIAS	Pan-Mediterranean pelagic survey
MEDITS	Mediterranean International bottom trawl survey
MEPA	Malta Environment and Planning Authority
MEUSAC	Malta-EU Steering and Action Committee
MRA	Malta Resources Authority
MSDEC	Ministry for Sustainable Development, the Environment and Climate Change
MSFD	Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive)
NAP	Nitrate Action Programme
NBSAP	National Biodiversity Strategy and Action Plan
NEP	National Environment Policy
NFDCP	National Fisheries Data Collection Programme
NGO	Non-governmental organisation
NSF	National Spatial Framework
NSO	National Statistics Office
NSSD	National Strategy on Sustainable Development
ODZ	Out of the Development Zone
OPM	Office of the Prime Minister
PAF	Prioritised Action Framework
PAMs report	Policies and Measures Report in accordance with Regulation (EU) No 525/2013
PIC	Prior Informed Consent
POW	Programme of Work
RDP	Rural Development Plan/Programme
SAC	Special Area of Conservation
SCI	Sites of Community Importance
SMR	Statutory Management Requirement
SPA	Special Protection Area
SPED	Strategic Plan for the Environment and Development
SSI	Sites of Scientific Importance
TPA	Tree Protection Area
UNCCD	United Nations Convention to Combat Desertification
UNCLOS	United Nations Convention on Law of the Sea
UNFCCC	United Nations Framework Convention on Climate Change
UOM	University of Malta
WBRU	Wild Bird Regulation Unit
VMP	Valley Management Partnership
WFD	Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy
WSC	Water Services Corporation
YRE	Young Reporters for the Environment

Part I
Biodiversity of the Maltese Islands - Update on the status, trends, and threats and implications for human well-being

1.1 Exceptional biodiversity and ecosystems in the country

The Maltese archipelago, located in the Central Mediterranean, consists of a group of three islands: Malta (245.73Km^2) and the two smaller islands of Gozo (67.08Km^2) and Comino (2.78Km^2). Despite its small land area, the Maltese islands and surrounding territorial waters are rich in native plant and animal diversity, mostly plants and invertebrates, as well as habitat diversity. Malta's isolated yet central position in the Mediterranean has led to some species exhibiting elements of Western Mediterranean, Eastern Mediterranean, North African and Sicilian affinity (including circum-Sicilian islands). 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 account of elements of the country's biodiversity is provided in Malta's Fourth National Report to the Convention on Biological Diversity (4NR). Elements of exceptional biodiversity in Malta are with respect to its strict endemic species as well as local rupestral communities that harbour specialised vegetation assemblages and are also crucial nesting sites for seabirds. Other terrestrial habitats of note are *Anthyllis* phrygana identified by the clear dominance of *Anthyllis hermanniae* ssp. *melitensis*, temporary rainwater rockpools, which harbour very specialised and rare elements of biodiversity such as *Damasonium bourgaei* and *Triops cancriformis* (fauna), and species-rich annual xeric grasslands, which occur within karst and harbour a wealth of different grass species. Various orchids, including the endemic *Anacamptis urvilleana* and *Ophrys melitensis*, also occur within this type of habitat. Relevant fauna known from karstic sub-types of this habitat include the endemic snails, *Muticaria macrostoma*, *Lampedusa imitatrix*, *L. melitensis* and *Trochoidea spratti*. When considering the marine environment, without a doubt *Posidonia oceanica* meadows are of exceptional importance for supporting other elements of biodiversity. More information on ecosystems in Malta is provided in Section 1.2.1 below.

1.2 Importance of biodiversity to human well-being and socio-economic development

Biodiversity drives the functioning of terrestrial, freshwater and marine ecosystems in the country. Biodiversity also forms the basis of the multiple benefits provided by ecosystem goods and services to people for their day-to-day comfort, well-being, health and security as well as to the various production and extractive sectors. Ecosystems services are categorised into provisioning, regulating, supporting and cultural services as further detailed in Sub-section 1.2.1, which applies an adapted version of typologies on ecosystem services by the Millennium Ecosystem Assessment, TEEB and the CICES System[3,4].

1.2.1 Importance of ecosystem services to human well-being and socio-economic development

"Provisioning Services" are ecosystem services that describe the various tangible goods, materials and resources obtained from ecosystems and that may be exchanged or traded. Provisioning services including the following sub-categories:

[3] For a comparison between these typologies please refer to Table 4 in EEA's Technical Report – 2013 – 067 on Mapping and Assessment of Ecosystems and their Services – An analytical framework for ecosystem assessments under Action 5 of the EU Biodiversity Strategy to 2020.
[4] This section and sub-section 1.2.1 builds on information provided by TEEB - http://www.teebweb.org/resources/ecosystem-services/

- *Provision of food*: Managed agro-ecosystems and natural ecosystems, in particular marine ecosystems (in Malta's case), provide the goods that are directly or indirectly important for nutrition. These include: cultivated crops, wild plants and their outputs (such as capers and herbs) and increasingly featuring in Maltese cuisine (as in the case of borage and wild asparagus), reared animals and their outputs (such as meat, and honey from bees), wild animals and their outputs (such as fish and seafood), and reared/farmed fish from aquaculture. Maquis includes trees, such as carob and olive trees, which were introduced in Malta in antiquity in view of their usefulness. These are exploited to this day for the making of carob julep/syrup and olive oil. Garigue is an important habitat for many aromatic shrubs that are used as culinary herbs such as *Rosmarinus offinalis,* while other species have even been associated with medicinal properties, such as *Satureja microphylla*. The thyme component (*Thymus capitatus*) of this habitat is important in honey production as it is a foraging species for the honey bee. In Malta, the provision of food from freshwater ecosystems is not viable due to the absence of lakes and rivers.

- *Provision of raw materials:* Ecosystems can provide a plethora of materials for construction, fuel (including wood and biomass-based energy sources), plant oils that are directly derived from wild and cultivated plant species, as well as fibres and other materials from plants, algae and animals for direct use or processing to manufacture goods. The provision of raw materials, such as wood is limited in Malta and indeed commercial forestry is not practised. In Malta the main provision in this category would be with respect to materials from plants and animals for agriculture use, such as fodder. Harvesting of reeds is also limited. The provision of biomass-based energy sources is of limited potential in the country due to the scarcity of land for growing bioenergy crops.

- *Provision of water*: This category includes the provision of water for drinking purposes and for non-drinking purposes. The per capita availability of natural freshwater resources is less than 100m^3 per year per inhabitant in Malta. This is below the line of absolute water-poverty of 500m^3 per year per inhabitant[5]. Surface water is not presently being used as a potable water source. Although the major source of potable water comes from desalination from three reverse osmosis plants located across the Islands, Malta also heavily relies on ground water supply from aquifers, which are tapped both by private entities and by the Water Services Corporation.

- *Provision of genetic resources and biochemicals*: Living organisms provide various raw materials for the pharmaceutical, cosmetic and food industries. All ecosystems are a potential source of genetic resources. In Malta for instance there is the use of natural extracts from the non-native *Opuntia ficus-indica* and the native *Padina pavonica*. Wild landraces are important in plant breeding programmes of crops.

- *Provision of ornamental resources*: Use of local biodiversity for ornamental purposes was a common practice in the past though this has decreased drastically in the last decade. Wild cut flowers of *Narcissus elegans* and *N. tazetta* are picked and sold on a small scale. These species, including others, are covered by national legislation with respect to the possibility of applying management measures should their taking or exploitation adversely affect the conservation status of the species in question.

"Regulating Services" are the services that ecosystems provide by acting as regulators that control natural processes. Regulating services including the following sub-categories:

[5] http://mra.org.mt/wp-content/uploads/2012/07/250/Mediterranean_Groundwater_Report_final_1502071.pdf

- *Air quality regulation*: Trees and other vegetation not only release oxygen to the environment but also play an important role in regulating air quality by removing pollutants from the atmosphere.

- *Climate Regulation*: Ecosystems, such as woodlands, wetlands and seagrass meadows regulate the climate by storing and sequestering greenhouse gases (including carbon dioxide) and hence serve as carbon stores. The canopy of trees (depends on shape and density) also provides shade during hot summers. Trees are vital to control the overall temperature regulation in urban environments (the so called "urban heat island effect") and to reduce local heat-related stresses. Biodiversity also plays an important role by improving the capacity of healthy and functioning ecosystems to adapt to the effects of climate change.

- *Moderation of extreme events and water flows*: Certain ecosystems (such as wetlands) and living organisms (such as trees, coral reefs) create buffers against natural disasters and weather extremes (such as floods, storms and landslides), thereby preventing possible costly loss and damage. Valley watercourses are a very important ecosystem in view of the availability of water and for drying higher ground during the rainy season and hence in preventing floods. Saline marshlands act as a water catchment area and are important for coastal protection.

- *Mediation of waste, toxins and other nuisances*: This category comprises mediation of waste, toxins, and other nuisances (e.g. smell/noise and visual impacts) by biota and ecosystems through filtration, sequestration/storage, accumulation, dilution and buffering. Ecosystems (such as wetlands) filter waste and act as a natural buffer to the surrounding environment. Reed beds that colonise watercourses are also important in filtering pollutants. Waste is also broken down through the biological activity of microorganisms.

- *Erosion prevention and maintenance of soil fertility*: Soil erosion is a key factor in the process of land degradation and desertification. Vegetation cover provides a vital regulating service by preventing soil erosion through mass stabilisation and attenuation of mass flows. 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 and 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. Well functioning ecosystems supply the soil with nutrients required to support plant growth. Sand dunes are in turn important in the prevention of beach erosion.

- *Pollination and seed dispersal*: Animals, such as insects and birds, are pivotal for the pollination of plants and trees as well as in seed dispersal. Pollination is essential for the development of fruit, vegetables and seeds.

- *Biological control, pest and disease regulation*: Ecosystems are important for regulating pests and vector-borne diseases that harm plants, animals and people. Such regulation is through the activities of predators (e.g. birds, bats, reptiles, amphibians) and parasites (e.g. beneficial insects) that act as natural controls. Bats, for instance play an important ecological role by controlling insect pest numbers, such as *Galleria mellonella*, which is a nuisance to bee keepers as this moth mines bees hives and bores in wooden cases[6].

[6] Note on the Diet of a Grey Long-eared Bat, *Plecotus austriacus* (Fischer, 1829) from Mdina, Malta (Chiroptera, Vespertilionidae). Borg & Sammut, 2002.

"Supporting Services" are the underlying processes that drive the production of other services. They are represented by the following sub-categories:

- *Nutrient and water cycling:* Soil biodiversity is essential in nutrient cycling (by decomposers) and in the maintenance of soil fertility, which is in turn essential for plant growth and for sustaining agriculture. Ecosystems play a vital role in the hydrological cycle, through the regulation of water flow and the purification of water. Water is a primary resource upon which all life, including man, essentially depends for survival (and development). The multi-sectoral nature of water use by man is reflected by the basic water requirements of many different sectors (*e.g.* domestic, tourism, agriculture, recreation, industry, fisheries, and aquaculture). Water is used for instance for irrigating crops, as a medium for fish farming, as a medium for shipping, for basic human needs (provision of drinking water, for food production and for general sanitation and hygiene purposes) and for bathing as well as other forms of recreation. The water cycle is dependent *inter alia* on plants/vegetation, soil and wetlands for water capture, transpiration and evaporation as well as for influencing how water is routed and stored.

- *Provision of habitats for species:* Every ecosystem provides different habitats essential for the provision of food, water and shelter and hence maintenance of the biological life cycles of species and their ultimate survival. Some species also require specialised habitat requirements (termed "habitat specialists" as opposed to "habitat generalists"), while migratory species (birds, mammals, insects, and fish) depend upon different ecosystems. Wetlands are for instance important stop over sites for migrating waders, while cliffs support many endemic and sub-endemic species that have specialised ecological requirements.

- *Maintenance of genetic diversity:* Genetic diversity is the variety of genes between and within species populations. A diverse gene pool provides the basis for locally well-adapted cultivars and for plant and animal breeding to develop commercial crops and livestock. Genetic diversity also enables adaptation to changing environmental conditions.

"Cultural Services" are the non-material benefits derived from ecosystems and nature and are represented by the following sub-categories

- *Recreation and mental and physical health:* This includes experiential and physical use of land and seascapes in different environmental settings for outdoor recreational activities (such as walking, trekking, hiking, land and water sports) that are a form of physical exercise but also for picnics with family and friends, and for general relaxation and respite from hectic lifestyles. Green spaces in villages and towns also play an important role in maintaining mental and physical health. Ecosystems that are tourist attractions (such as sandy beaches, reefs, sea caves and cliffs) play an important role for many kinds of tourism, which in turn provides considerable economic benefits and is a vital source of income in small island states, such as Malta.

- *Aesthetic, educational and scientific values:* Elements of biodiversity, different ecosystems as well as natural landscapes and seascapes are the subject matter for scientific research and education, as well as a source of inspiration for art and culture.

- *Spiritual, religious and emblematic values:* Nature is a common element of religion and traditional customs/folklore. Certain elements of biodiversity are also emblematic such as the national plant (*Cheirolophus crassifolius*), the national bird (*Monticola solitarius*) and the national tree (*Tetraclinis articulata*) in Malta. Within this category are the existence and bequest values of biodiversity.

Table 3 provides an indication of the link between broad categories of ecosystems in Malta with the various types of ecosystem services.

Table 3 - Types of ecosystem services in the Maltese Islands per type of ecosystem

Broad-scale Ecosystem Type		Type of Provisioning Service					Type of Regulating Service							Type of Supporting Service			Type of cultural Service		
		Provision of food	Provision of raw materials	Provision of water	Provision of genetic resources & biochemicals	Provision of ornamental resources	Air Quality Regulation	Climate Regulation	Moderation of extreme events & water flows	Mediation of waste, toxins and other nuisances	Erosion prevention and maintenance of soil fertility	Pollination and seed dispersal	Biological control, pest & disease regulation	Nutrient and water cycling	Habitats for species	Maintenance of genetic diversity	Recreation & mental & physical health	Aesthetic, educational & scientific values	Spiritual, religious & emblematic values
TERRESTRIAL	**Urban** (includes urban, industrial, commercial, and transport areas, urban green areas, mines, dumping and construction sites)						✓	✓							✓		✓		
	Cropland (agricultural areas)	✓	✓					✓			✓	✓	✓	✓	✓	✓		✓	✓
	Woodland and Forest (habitats dominated by woody vegetation)	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Heathland and Shrub (habitats dominated by shrubs and include heathland and sclerophyllous vegetation)	✓	✓		✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	
	Sparsely Vegetated Land (includes rocky slopes, beaches, cliffs and sand dunes)				✓	✓			✓		✓	✓	✓	✓	✓	✓	✓	✓	✓

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FESHWATER	**Inland surface water bodies**[7] (includes water courses and permanent freshwater pools)			✓					✓	✓			✓	✓	✓	✓	✓	✓	
MARINE	**Marine Inlets and Transitional Waters** (ecosystems on land-water interface and include coastal wetlands and lagoons)	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	
	Coastal (coast, shallow marine systems)	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	
	Shelf (marine systems away from coastal influence and down to shelf break at depth of 200m)	✓	✓	✓	✓	✓		✓		✓				✓	✓	✓		✓	
	Open (marine systems beyond the shelf break at depths beyond 200m)	✓	✓	✓	✓	✓		✓		✓				✓	✓	✓		✓	

[7] The terminology for the ecosystem type "rivers and lakes" is not adopted since there are neither rivers nor lakes present in Malta.

Ecosystem services are strongly determined by land use and specific environmental conditions (including soil and water properties), which can all be altered by human action. Direct drivers of biodiversity loss bring about changes in ecosystem services with socio-economic and cultural implications. For instance, land conversion through development of grey infrastructure and urban encroachment on the countryside, would negatively affect provisioning services (e.g. loss of goods produced by the replaced ecosystem), regulating services (e.g. loss of natural erosion control and water filtration through soil sealing by artificial surfaces, and loss of carbon sequestration through removal of vegetation cover and trees), supporting services (e.g. loss of provision of habitat for species and loss of nutrient cycling) and cultural services (e.g. loss of non-material benefits derived from the replaced ecosystem). In-depth information of the different ecosystems services provided by ecosystems in Malta will be available once Malta undertakes a detailed assessment and mapping of ecosystems and their services. In the interim to the completion of this exercise, it is to be noted that ecosystem services may be inferred using land use data and spatial indicators as proxies to reflect the capacity of ecosystems to generate services. Information on ecosystem services may be obtained directly from land use cover or habitat maps, for areas where the dominant service relates directly to land use, such as Corine Land Cover (CLC) data[8,9,10,11]. In this respect the Corine Land Cover Map for the Maltese Islands (2006) (Figure 1) is of relevance with respect to certain services, such as food provision (where the CLC categories on agricultural areas are relevant), and for local climate and air quality (where CLC categories on green urban areas, agriculture with significant areas of natural vegetation, coniferous forest, sclerophyllous vegetation and mixed forest would be the most relevant). Various other CLC categories would also be relevant in the context of supporting services.

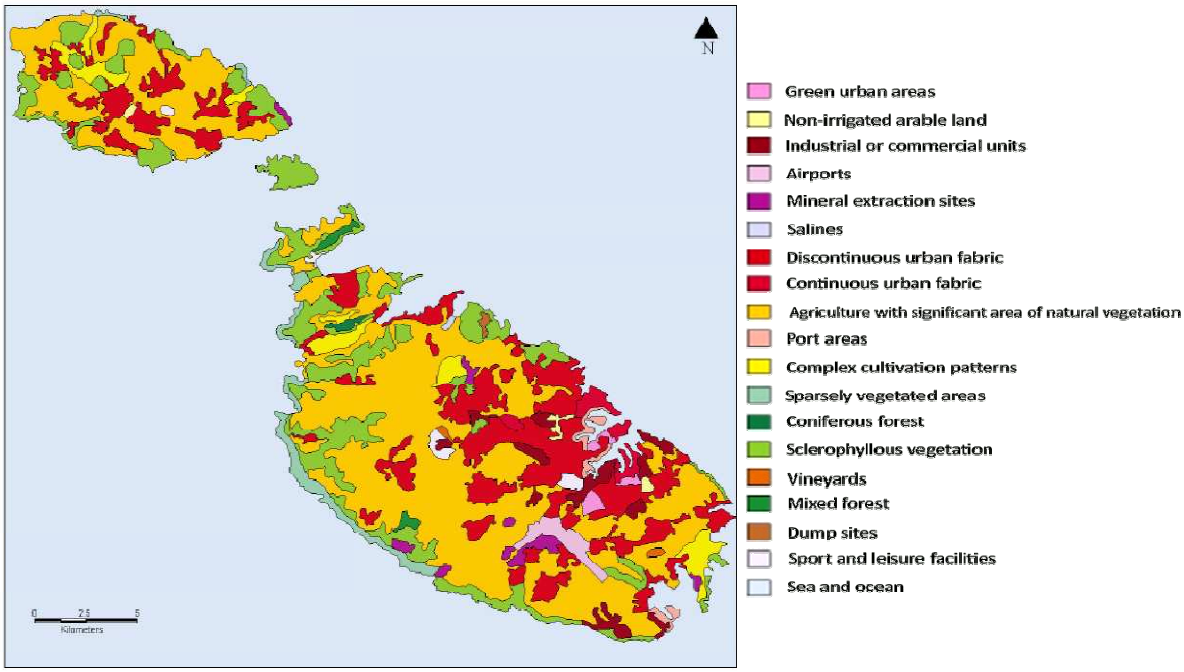


Figure 1 – Land use types in Malta
(Source – MEPA State of the Environment Indicators of 2007 - http://www.mepa.org.mt/soe2007-land)

[8] CLC describes land cover (and partly land use) according to a nomenclature of 44 classes organised hierarchically in three levels. The smallest surfaces mapped (mapping units) correspond to 25 hectares. Linear features less than 100 m in width are not considered.
[9] See – European Commission Technical Report – 2013 – 067 on Mapping and Assessment of Ecosystems and their Services – An analytical framework for ecosystem assessments under Action 5 of the EU Biodiversity Strategy to 2020.
[10] See – European Commission Technical Report – 2014 – 080 on Mapping and Assessment of Ecosystems and their Services - Indicators for ecosystem assessments under Action 5 of the EU Biodiversity Strategy to 2020.
[11] http://www.eea.europa.eu/publications/COR0-landcover

The map in Figure 1 represents the CLC data for 2006. The only change in 2012 when compared to 2006 is the increase (by 20.6 hectares) of dump sites and the corresponding decrease in sclerophyllous vegetation as shown in Table 4 below.

Table 4 - Comparison between 2006 and 2012 CLC Data for Malta
Source: MEPA, 2014

Ecosystem Type	CLC Level 1	CLC Level 2	CLC Level 3	CLC 2006 Area (HA)	CLC Change 06-12 (HA)	CLC 2012 Area (HA)
Urban	1. Artificial surfaces	1.1. Urban fabric	1.1.1. Continuous urban fabric	388.6	0.0	388.6
			1.1.2. Discontinuous urban fabric	6658.3	0.0	6658.3
		1.2. Industrial, commercial and transport units	1.2.1. Industrial or commercial units	839.4	0.0	839.4
			1.2.3. Port Areas	231.8	0.0	231.8
			1.2.4. Airports	371.8	0.0	371.8
		1.3. Mine, dump and construction sites	1.3.1. Mineral extraction sites	358.6	0.0	358.6
			1.3.2. Dump sites	40.7	20.6	61.3
		1.3. Artificial non-agricultural vegetated areas	1.4.1. Green urban areas	181.1	0.0	181.1
			1.4.2. Sport and leisure facilities	216.7	0.0	216.7
Cropland	2. Agricultural areas	2.1. Arable land	2.1.1. Non-irrigated arable land	121.6	0.0	121.6
		2.2. Permanent crops	2.2.1. Vineyards	56.5	0.0	56.5
		2.4. Heterogeneous agricultural areas	2.4.2. Complex cultivation patterns	1071.3	0.0	1071.3
			2.4.3. Land principally occupied by agriculture, with significant areas of natural vegetation	14996.6	0.0	14996.6
Woodland and Forest	3. Forests and semi-natural areas	3.1. Forests	3.1.2. Coniferous forest	66.8	0.0	66.8
			3.1.3. Mixed forest	143.0	0.0	143.0
Heathland and Shrub		3.2. Shrub and/or herbaceous vegetation association	3.2.3. Sclerophyllous vegetation	4971.6	-20.6	4951.0
Sparsely Vegetated Land		3.3. Open spaces with little or no vegetation	3.3.3. Sparsely vegetated areas	811.9	0.0	811.9
Marine Inlets and Transitional Waters	5. Water bodies	4.2. Coastal wetlands	4.2.2. Salines	25.1	0.0	25.1
Coastal to Open Waters		5.2 Marine waters	5.2.3. Sea and Ocean	460941.1	0.0	460941.1

Tables 5 to 13 respectively describe a particular broad-scale ecosystem type and provide information on the main pressures and threats and, their impact on ecosystem services and associated socio-economic and cultural implications. Not all ecosystem types are addressed.

Table 5 – Cropland (Agro-ecosystem)		
Ecosystem Description	The 2010 Census of Agriculture provides a comprehensive stock-take of land use by the agriculture sector[12]. Utilised agricultural area (UAA) includes arable land worked regularly under a system of crop rotation [79%], permanent crops [11%] and kitchen gardens [10%]. The UAA declared by farmers in the 2010 Agriculture Census amounted to 11,452.8ha. 1,915 holdings cultivated a total of 701.1ha with potatoes, with 19.5%, or 374 holdings, having 60.5% of the total area. The cultivation of forage crops, which is predominant in Malta and Gozo, accounted for 5,552.5ha. A total of 6,678 holdings cultivated this crop. The area cultivated with vegetables amounted to 1,730.5ha. A total of 2,369 holdings cultivated vegetables for commercial purposes. 20.3% of these holdings accounted for 58.5% of the total area under vegetables. With an area of 227.1ha, peaches accounted for 61.1% of the total fruit and berry plantations. 111.3ha were dedicated to citrus. Holdings engaged in the cultivation of citrus plantations amounted to 885, of which 5.1%, or 45 holdings, accounted for 38.0% of all citrus planted for commercial purposes. During the Census, olive groves amounted to 140.3ha and were cultivated by 803 holdings. 614.1ha of vineyards were cultivated on 1,258 holdings, of which 70.8% or 434.6ha, were allocated to the production of grapes for quality wines, while only 76.5ha were dedicated to table grapes. When considering livestock, according to the census data, 15,688 cattle were found on 291 holdings. Dairy cows numbered 6,740 heads, or 43.0% of all cattle. The pig population amounted to 70,593 heads. Whether for own consumption or for commercial purposes, sheep and goats in Malta are primarily reared for their milk, which is mainly used to produce traditional cheeselets (known in Maltese as "ġbejniet"). The total sheep population in the Maltese Islands recorded on Census Day amounted to 11,873. The total goat population in the Maltese Islands amounted to 4,384 heads. A total of 0.98 million poultry heads were recorded, of which 68.2%were broilers. The remaining 30.8% were layers. Agricultural activity in the Maltese islands plays a crucial role in the maintenance of the rural character of the countryside via a patchwork of terraced cultivated and fallow fields. The traditionally built dry stone walls, which delineate land parcels, are not only crucial for soil conservation but also serve as important ecological corridors for terrestrial reptiles and for shrews as well as a refuge for various invertebrates. Agricultural land provides a food supply for insectivorous birds that breed in the Maltese Islands. Very rare plant species are also encountered in fallow fields. When considering Corine Land Cover Data for 2006 and similarly for 2012, agricultural areas amount to 16,246ha.	
Main Pressures & Threats	Climate Change and associated environmental changes affecting agricultural yields:	When comparing the means of the periods from 1995-2010 to that from 1951-1994, there is a shift towards an increased mean and variance in ambient air temperature. While the effect is relatively little change in the frequency of extreme temperatures, an increased hot weather and previous record high temperatures are being exceeded far more often. The average temperature of 18.5°C for the period 1951-1980 is markedly different from 1981-2010, during which the temperature distribution shifted to an average of 19.2°C. When considering trends in annual precipitation, there is significant difference at the 95% confidence level between the means of the periods 1995-2010 and 1951-1994. The observed increased warming during the past 15 years may have influenced fruit productivity, which overall increased. Data related to vegetable volume index do not show

[12] NSO 2012 - Census of Agriculture 2010 [Online] Available from: http://www.nso.gov.mt/statdoc/document_file.aspx?id=3360

		any levelling or decrease in productivity due to slight increase in air temperature or no increase in rainfall (Source: NSO, 2011)[13]. The Agriculture Sector is also a contributor of greenhouse gases with an average of 85,800 tonnes CO_2 equivalence (includes emissions from enteric fermentation, manure management and from soils which are used for agricultural purposes) (Source: NSO, 2010)[14].
	Decline in Soil Organic Matter and Quality and Risk of Soil Erosion:	Soil organic matter is directly important to soil quality, because it influences the exchange of nutrients, water retention, soil structure and its stability, soil ecology and biodiversity. One of the main causes of the decline in soil organic matter is human activity, mainly intensive cultivation. It is widely believed that a major threshold is 2% soil organic carbon, below which potentially serious decline in soil quality will occur. In 2006 the average organic matter in Malta's topsoil was 2.1%, 0.2% more than the average in 2002 (Source – State of Environment Indicators 2006)[15] The State of the Environment Report for 2005 documented that although data on rates of soil erosion in Malta are not available, this phenomenon is believed to be one of the most important threats to soil in the country. The severe to moderate erosion of arable land in the Maltese Islands was attributed to poor rubble wall maintenance. A risk map for soil erosion for Northwest Malta was produced by the MAP Malta CAMP Project[16].
	Crop Plant Pests and Diseases of Economic Importance:	Various crop plant pests (e.g. *Tuta absoluta*) have inadvertently been introduced in Malta causing damage to susceptible crop plants with economic repercussions while others are at risk of introduction but are not yet present. Regulations as well as monitoring and control programmes are in place to deal with these in line with the EU Plant Health Regime and also to intercept others.
Ecosystem Services (using CICES classification)	Provisioning – Nutrition – Biomass – Cultivated Crops (e.g. vegetables, fruits etc.); & Reared animals and their outputs (meat, dairy products, honey etc.); Provisioning – Material – Biomass – Materials for agricultural use (e.g. fodder and fertilizer/manure); Provisioning – Materials – Water – Groundwater for non-drinking purposes (freshwater abstracted from groundwater layers for irrigation and livestock consumption); Regulation & Maintenance – Mediation of waste, toxins and other nuisances – Mediation by ecosystems (filtration/sequestration/storage/accumulation) & Mediation of smell/noise/visual impacts; Regulation & Maintenance – Mediation of mass, liquid and gaseous flows; Regulation & Maintenance – Maintenance of physical, chemical, biological conditions – Lifecycle maintenance, habitat and gene pool protection; Regulation & Maintenance – Maintenance of physical, chemical , biological conditions – Pest & Disease control & Soil formation and composition; Cultural – Intellectual and representative interactions – scientific (subject matter for research), educational, heritage; Cultural – Physical and experiential interactions	
Impacts on human well-being benefits	Health, Nutrition & Security	

[13] NSO 2011 - *The Climate of Malta: statistics, trends and analysis, 1951-2010* [Online] Available from: http://www.nso.gov.mt/statdoc/document_file.aspx?id=3141

[14] NSO 2010 - *Sustainable Development Indicators for Malta 2010* [Online] Available from: http://www.nso.gov.mt/statdoc/document_file.aspx?id=2913

[15] http://www.mepa.org.mt/soe2006-soil

[16] http://www.mepa.org.mt/soer2005-soil

Value	Health Value:	The health benefits of a balanced diet rich in fruit and vegetables are widely acknowledged including by the World Health Organisation[17]. Such benefits would include amongst others preventing major diseases and reducing risk of cardiovascular diseases, lower blood pressure, lower risk of eye and digestive problems. Average food expenditure by residents of Malta on vegetables and fruit is respectively 67,438,000 and 45,603,000 Euro. Vegetables and fruit make up 13% and 9% respectively of average food consumption. The greatest component is meat (23%) followed by bread and cereals (19%)[18].
	Economic Value:	Fresh vegetables that passed through organised markets in 2012 amounted to 38,542 tonnes, yielding a wholesale value of €17.1 million and that of fruit amounted to 2,694 tonnes with a value of €2.6 million. Data per species/variety is also available (Source: NSO, 2012)[19].
	Social Value:	In 2010, 18,539 persons were actively engaged in agriculture activity, of whom, 1,301 were engaged full-time and 17,238 were engaged on a part-time basis (Source: NSO, 2012)[20].

Table 6 – Woodland and Forest	
Ecosystem Description	Pine forests in Malta are all semi-natural, and are known as either: (a) relatively closed-canopy communities on adequate soil and with some macrophytes undergrowth with intermixing maquis and garigue communities, the latter on stone outcrops; or (b) as 'pseudo-open' communities in rock crevices, intermixed amongst garigue/phrygana species. Two types of communities of oak forest remnants exist in Malta: (a) closed-canopy oak forest remnants, such as at Mġiebaħ, with climbers and limited light beneath the oak canopies, consequently reducing the maquis species undergrowth; (b) open-canopy type, with maquis undergrowth, as at Il-Ballut. When considering *Olea* and *Ceratonia* forests, this habitat type usually occurs along impenetrable valley sides and inaccessible areas. Very few sites of close clumps of *Oleo-Ceratonion* maquis in the Maltese Islands would qualify as *Olea* and *Ceratonia* forests, since most carobs are found isolated at the margins of fields, both in Malta and Gozo. In Comino, this habitat is very rare. However, trees forming such habitat types have been planted in the area in the past. This type of maquis is on the increase in the Maltese Islands, particularly due to abandonment of agriculture - this is hence a positive pressure in this case. The native riparian forests with *Salix* spp. are almost completely extinct from the Maltese Islands, and the existing range is only a fraction of the former range of this habitat type. Only relicts survive in selected areas. This is mostly due to competition with agriculture and the need for water resources. The *Nerio-Tamaricetea* community is very rare and is mostly confined to inaccessible coastal areas and some valleys with an adequate water supply from springs or watercourses, particularly on the island of Gozo. It is much rarer in Malta and Comino, where the coastal woodlands have suffered from historical destruction in view of invasions, agriculture and construction. Indeed, *Nerium oleander* is believed to have become extinct from the Maltese Islands; the species is now naturalised in a few valleys in Malta and Gozo.

[17] http://www.who.int/dietphysicalactivity/fruit/en/index2.html
[18] NSO News Release – *World Environment Day 2013* - http://www.nso.gov.mt/statdoc/document_file.aspx?id=3611
[19] NSO 2012 – *Agriculture & Fisheries 2012* [Online] Available from: http://www.nso.gov.mt/statdoc/document_file.aspx?id=3846
[20] NSO 2012 – *Agriculture Census 2010* [Online] Available from: http://www.nso.gov.mt/statdoc/document_file.aspx?id=3360

Ecosystem Condition	When considering Corine Land Cover data (for 2006 and similarly 2012) for forests which comprises coniferous forest and mixed forest, it amounts to 209.8ha. When considering the surface area (based on the number of 1x1 km grid cells in which the presence of the habitat type has been recorded) of woodland and forest-related habitats listed in Annex I to the Habitats Directive and that are found in Malta, values are as follows: Habitat 5230 - Arborescent matorral with *Laurus nobilis* = 9km^2 Habitat 9320 - *Olea* and *Ceratonia* forests = 24km^2 Habitat 9340 - *Quercus ilex* forests = 10km^2 Habitat 9540 - Mediterranean pine forests with endemic Mesogean pines = 6km^2 Habitat 92A0 - *Salix alba* and *Populus alba* galleries = 9km^2 Habitat 92D0 - Southern riparian galleries and thickets (Nerio-Tamaricetea) = 20km^2 Information on the habitat conservation status of forest-related Annex I habitat types found in Malta is provided in Sub-section 1.3.4 of Malta's 5NR on the basis of Malta's Second Article 17 report in line with the Habitats Directive.	
Main Pressures & Threats	Alien and Invasive Species	Alien species, such as *Acacia* species and *Eucalyptus* species, were in the past planted in certain wooded areas and maquis as part of inappropriate afforestation. Invasive species nowadays that threaten the woodland and maquis ecosystem apart from *Acacia* spp. namely *Acacia saligna*, are *Ailanthus altissima* and *Ricinus communis*. Widespread invasive species include *Oxalis pes-caprae* and *Aster squamatus*. *Arundo donax* also invades where water is available.
	Anthropogenic-related Activities (using pressure and threat categories of the Article 17 Reporting to the Habitats Directive)	Examples include (not necessarily impacting every forest-related habitat type): - forest replanting including on open ground - improved access to site - recreational activities and associated impacts such as trampling and littering - removal of dead and dying trees and forest undergrowth - abandonment of pastoral systems and lack of grazing - burning down - forest and plantation management and use - fertilisation and discharges - human induced changes in hydraulic conditions and flooding defence in inland water systems - groundwater abstractions for agriculture
Ecosystem Services (using CICES classification)	Provisioning – Nutrition – Biomass – Wild Plants and their outputs – (wild berries, fruits etc.); Provisioning – Materials – Biomass – Genetic materials from all biota; Regulation & Maintenance – Mediation of waste, toxins and other nuisances – Mediation of noise/visual impacts; Regulation & Maintenance – Mediation of Mass Flows – mass stabilisation and control of erosion rates; Regulation & Maintenance – Maintenance of physical, chemical, biological conditions – Lifecycle maintenance, habitat and gene pool protection; Regulation & Maintenance – Maintenance of physical, chemical, biological conditions – Weathering processes and decomposition & fixing processes (maintenance of biogeochemical conditions of soils); Regulation & Maintenance – Maintenance of physical, chemical, biological conditions – Atmospheric composition and climate regulation (greenhouse gas/carbon sequestration) including micro and regional climate regulation (modifying temperature, humidity, wind fields, maintenance of air quality etc.); Cultural – Physical and experiential interactions – experiential use (such as bird watching) and physical use (such as walking, hiking etc.); Cultural – Intellectual and representative interactions – scientific (subject matter for research), educational, heritage, entertainment, and aesthetic;	

	Cultural – Spiritual, symbolic (e.g. national tree) and other interactions (existence and bequest)	
Impacts on human well-being benefits	Health & Enjoyment	
Value	Health Value:	Woodland remnants in Malta are essential green lungs in the Maltese Islands for oxygen production. Malta's PAMS Report for 2013 in the context of land use, land use change and forestry (LULUCF) mentions the following: "In view of the high population density of the islands and the limited land availability, and to a certain extent the local climatic conditions (such as limited rainfall), the potential for further reduction of CO_2 emissions through carbon sequestration in vegetation is minimal. … In recent years afforestation projects have been undertaken that have had an effect on the area covered by permanent vegetation, particularly trees; however, the CO_2 removals have not been estimated, given the small contribution expected in terms of national GHG removals as well as the complexity of estimating GHG savings of this measure in the short term." CO_2 removals through land use, land use change and forestry accounted for 59.66Gg in 2011 (MRA, 2013)[21].
	Economic Value:	The "evergreen wood" 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 invasions in the 16th century, namely, to make wood scarce for the defenders. Trees were also felled as a source of wood during both World Wars. What remains nowadays are pockets of evergreen wood remnants generally composed of large evergreen trees such as *Quercus ilex* and *Pinus halepensis*, which are protected. It is to be noted that threatened woodland and maquis habitats are essentially protected through legal site designation (e.g. Tree Protection Areas and Natura 2000 Sites). Species of trees are also protected. Malta does not practice commercial forestry, and relies on imported wood. Imports of paper and paperboard articles (CHP No. 48) and furniture (includes bedding etc. – CHP No. 94) in January 2014, amounted to, respectively, 7,782,000€ and 2,847,000€[22]. 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.
	Historic/Cultural Value:	The site, located in the area of Bidnija, harbours what are probably the oldest trees in the Maltese Islands, which are reputedly over 2000 years old. These trees are native olive trees of the "Bidni" variety (hence the name "Bidnija") and are also declared as national monuments. The trees have been protected since 1933, when they were declared as trees having an Antiquarian Importance. The site is also declared a Nature Reserve, an Area of Ecological Importance and a Site of Scientific Importance. This site was recently designated a Tree Protected Area on 24 May 2011, in accordance with the provisions of the "Trees and Woodlands Protection Regulations, 2011" as per Government Notice 473/11.

[21] National Greenhouse Gas Emissions Inventory Report for Malta 1990-2011, MRA (2013)
[22] NSO (2014). *International Trade 2014* [Online] Available from: http://www.nso.gov.mt/statdoc/document_file.aspx?id=3962

	Social Value:	Wooded areas are sought after for various forms of recreational activities namely walking and picnics. Buskett is a favourite site for such purposes. It qualifies as the only locality which can be said to represent "mature woodland" in the Maltese Islands.

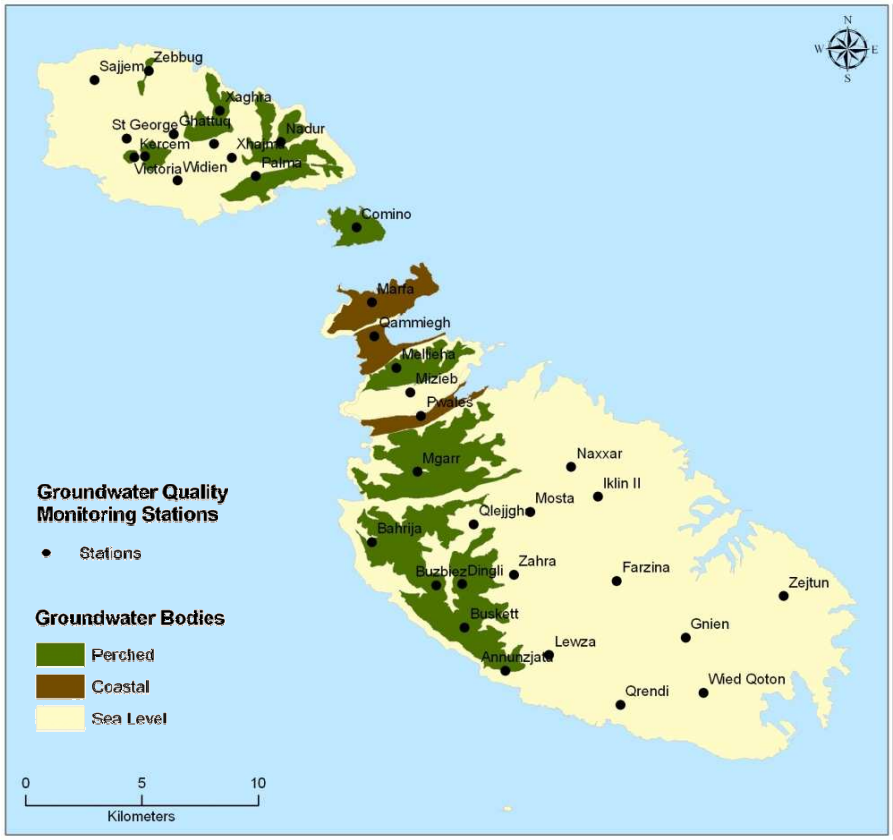
Table 7 - Sparsely vegetated land - Cliff/rupestral communities		
Ecosystem Type	When considering the surface area (based on the number of 1x1 km grid cells in which the presence of the habitat type has been recorded) of rupestral habitats listed in Annex I to the Habitats Directive and that are found in Malta, values are as follows: Habitat 1240 - Vegetated sea cliffs of the Mediterranean coasts with endemic *Limonium* spp. = 96km^2 Habitat 8210 - Calcareous rocky slopes with chasmophytic vegetation = 90km^2 Rupestral communities are both of national and international importance. Maltese sheer seaside cliffs and screes 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 species of conservation value, including endemic plants, with *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 - *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 *Calonectris diomedea, Puffinus yelkouan* and *Hydrobates pelagicus* ssp. *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. All of the cliffs on the west side of mainland Malta are protected and so are most of the cliffs in Gozo and Comino. Vegetated sea cliffs of the Mediterranean coasts with endemic *Limonium* spp. (Habitat 1240) – This community in the Maltese islands is found in very exposed coastal areas with low soil cover, and is typical of cliffs plateau, low-lying coralline limestone and weathered karstland along the coast, and is characterised by annuals and hardy, often succulent, shrubs. It is distinguished from the other, rarer, rocky shore and cliff communities (locally classed under habitat types 1420 and 8210) in the lower scrub cover, higher incidence of annual species, and the differential species. Calcareous rocky slopes with chasmophytic vegetation (Habitat 8210) - This community is typical of the local rdum communities, which also include sheer coralline limestone cliffs and cliff plateau. It is typified by a specialised vegetation assemblage, which is characterised by many Maltese endemic species, a number of which are palaeoendemics. Although the area and range of this habitat type are more-or-less unaltered in the last decade and habitat quality is still relatively good, there is some decline in certain areas due to human pressures.	
Ecosystem Condition	Information on the condition of Annex I rupestral habitat types found in Malta is provided in Sub-section 1.3.4 of Malta's 5NR on the basis of Malta's Second Article 17 report in line with the Habitats Directive.	
Main Pressures & Threats	Invasive Alien Species	Increase in cover and abundance of various invasive alien species, such as *Carpobrotus* spp., *Agave* spp. and *Opuntia* spp.
	Habitat loss, degradation and Fragmentation)	Due to: Quarrying, Artificial planting on open ground (non-native trees) and/or Disposal of inert materials
	Anthropogenic activities associated with use of the site (e.g. trampling, disposal)	Examples include: Trampling, overuse Outdoor sports and leisure activities, including rock climbing and motorised vehicles Improved access to site

	Natural-related	Collapse of terrain, landslide, erosion and other natural catastrophes Fire (natural)
Ecosystem Services (using CICES classification)	Provisioning – Nutrition – Wild plants and their output (e.g. Wild caper berries); Provisioning – Materials – Biomass – Genetic material from all biota; Regulation & Maintenance – Lifecycle maintenance, habitat and gene pool protection (e.g. habitat for rupestral plants, animals such as sea birds and important for harbouring endemic biodiversity); Cultural – Physical & experiential interactions (e.g. abseiling/climbing, walking, bird watching); Cultural – Intellectual and representative interactions – Scientific (subject matter for research), Educational, Heritage & Aesthetic; Cultural – Symbolic (endemic species), Existence (enjoyment provided by the landscape) and Bequest (Willingness to preserve plants, animals, ecosystems, landscape for future generations, moral perspective);	
Impacts on human well-being benefits	Health & Economic	
Value	Economic Value:	Cliffs are quarried for mineral extraction of limestone (soft stone and hard stone). As noted in Malta's State of the Environment Report of 2008, in 2007, 0.76% of Malta's land area was covered by quarries, while in 2008 this rose to 0.81%, an increase of 0.016km^2 such that total quarried area amounted to 2.54km^2 in 2008. Cliffs support various endemic species that are only found in our country. Cliff sites in Malta have a very high aesthetic value because of geological formations such as the Azure Window and Dwejra and hence are amongst the country's tourist attractions.
	Social, Recreational and Health Value:	Areas such as Dingli Cliffs and Ta' Ċenċ are popular among the Maltese for recreation such as walking and certain outdoor sports.

Table 8 - Sparsely vegetated land - Sand dunes	
Ecosystem Description	When considering the surface area (based on the number of 1x1 km grid cells in which the presence of the habitat type has been recorded) of sand dune habitats listed in Annex I to the Habitats Directive and that are found in Malta, values are as follows: 1210 - Annual vegetation of drift lines = 13km^2 2110 - Embryonic shifting dunes = 6km^2 2210 - *Crucianellion maritimae* fixed beach dunes = 3km^2 2220 - Dunes with *Euphorbia terracina* = 5km^2 Over the years many sand dunes have been lost and, nowadays, this ecosystem is extremely restricted in the Maltese Islands. Presently there are only few sand dunes 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 *Elytrigia juncea* and *Eryngium maritimum*); a semi-consolidated dune (characterised by *Euphorbia terracina*, *Pancratium maritimum* and *Echinophora spinosa*), and a fixed dune (vegetated with a dense thicket of salt tolerant shrubs such as *Ononis natrix* subsp. *ramosissima*). Maltese sand dunes also have characteristic invertebrate fauna namely nematodes, annelids, several insects, amphipods, and isopods. Annual vegetation of drift lines (Habitat 1210) - This habitat is not frequent in the Maltese Islands, and most sand dune systems lack well developed *Cakiletea* communities due to their small size. It is usually found along drift lines and embryo dunes or fore dunes close

	to the sea, often with a considerable input of organic matter, particularly from sea-grasses, mostly *Posidonia* residues, but also *Cymodocea* and *Halophila*. These *Cakiletea* communities generally occupy fringe communities, and are often intermixed with shifting dune communities. In many beaches, an impoverished version of this community is present, and in some cases, as in San Niklaw (north Comino), Exiles (l/o Tas-Sliema, Malta), and some beaches in the north of Gozo and the south of Malta, only individual plants of *Cakile maritima*, *Salsola* spp., *Euphorbia peplis* and/or *Polygonum maritimum* occur, often sporadically. Embryonic shifting dunes (Habitat 2110) - This community is usually found along fore dunes and the initial zones of the more 'inland' yellow dunes, and persists in almost all extant dunes, especially Ir-Ramla and Ir-Ramla tat-Torri, but is also found in varying degrees in other areas. *Crucianellion maritimae* fixed beach dunes (Habitat 2210) - Although typical species of Central Mediterranean fixed dune species (like *Crucianella maritima* and *Centaurea sphaerocephala* s.str.) are absent from the Maltese Islands, fixed dunes are represented by the *Centaureo-Ononidetum ramosissimae* community, of which two subtypes are known. The community of *Ononis natrix* subsp. *ramosissima* and *Pancratium maritimum* observed at Il-Qala ta' Santa Marija (Comino) is heavily degraded due to human activities and excessive tamarisk shade, and is possibly on the way to extinction. However, this community might represent a degraded phase of another association (as the *Eryngio maritimi-Elytrigetum juncei*); in fact *Eryngium maritimum*, is extinct from the said locality. Dunes with *Euphorbia terracina* (Habitat 2220) – This community forms part of the semi-consolidated sand habitats of L-Għadira, Ir-Ramla tat-Torri, Ir-Ramla tal-Armier and Ir-Ramla (Gozo), with the best extant population at the latter site.	
Ecosystem Condition	Information on the condition of Annex I sand dune habitat types found in Malta is provided in Sub-section 1.3.4 of Malta's 5NR on the basis of Malta's Second Article 17 report in line with the Habitats Directive.	
Main Pressures & Threats	Natural-related	Includes for instance erosion and the effect of storms
	Anthropogenic activities associated with use of the site	Such activities include (not necessarily common to all habitat types): Taking/Removal of terrestrial plants Outdoor sports and leisure activities, including camping and caravans Trampling, overuse Artificial planting on open ground (non-native trees) Disposal of household / recreational facility waste
	Invasive alien species	Presence of invasive alien species such as *Aptenia* spp., *Arundo donax*, *Carpobrotus edulis*, *Oxalis pes-caprae* and *Vitis vinifera*
Ecosystem Services (using CICES classification)	Regulation and maintenance – Mediation of mass flows through stabilisation and control of erosion rates; Regulation and maintenance – Mediation of liquid flows through coastal protection; Regulation and maintenance – Lifecycle Maintenance, habitat and gene pool protection; Genetic Resources – important habitat for specialised sand-dependent species; Cultural – physical and experiential interactions – physical use; Cultural – intellectual and representative interactions – scientific, educational and aesthetic and existence value;	
Impacts on human well-being benefits	Social & Security	
Value	Economic Value:	Sand as a resource is important in the construction industry. However there is no extraction from sand from sand dunes in Malta.
	Social Value:	Sand dunes are very important for the maintenance and replenishment of beaches, which in turn are popular for recreation and tourism. Specialised sand dune vegetation, having extensive root systems, is essential in the process of trapping

		sand. Sand dunes are also important in natural hazard regulation and protection of areas further inland e.g. storm surges, waves and flooding from sea level rise.

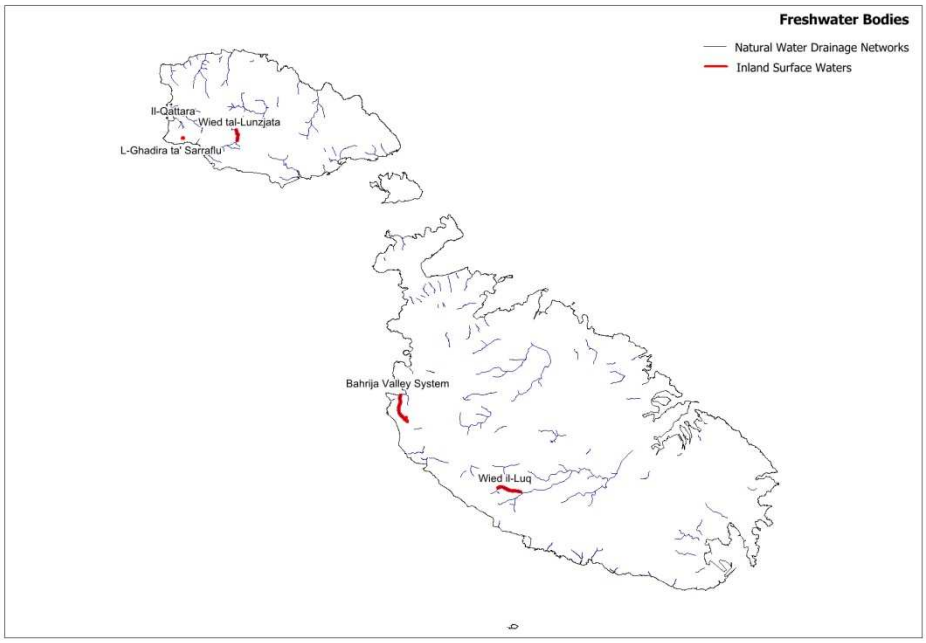
Table 9 – Groundwater Bodies		
Ecosystem Description	Malta's aquifer systems, or groundwater bodies, provide the major natural freshwater resource of the islands, and these are largely recharged through precipitation. Groundwater is the only renewable freshwater resource in Malta. Malta carried out its environmental and economic characterisation of its groundwater bodies in accordance with the EC Water Framework Directive[23]. Figure 2 provides a map of the location of perched and costal groundwater bodies and is of relevance to the ecosystem service on provision of groundwater. Maps of areas designated as drinking water safeguard zones are also relevant to this ecosystem service. There are available online[24].  **Figure 2 - Map of Groundwater bodies in Malta** (Source: MRA)	
Ecosystem Condition	Malta has a total of 15 designated groundwater bodies (GWBs) within the context of the Water Framework Directive. 2 GWBs have good chemical status while 13 of them (87%) are in poor status. As regards quantitative status, 73% of GWBs are assessed at good quantitative status, but 4 GWBs are in poor status (Data for 2009). 13 GWBs are at risk because of nitrates, 5 GWBs for seawater intrusion and 6 GWBs because of groundwater abstraction[25].	
Main Pressures & Threats	Nitrate Pollution	Nitrates in groundwater result from anthropogenic activities, mainly the application of nitrate-rich fertilisers, which leach into the aquifer system. Nitrate levels exceeded the EU limit value of 50mg/l in 11 out of 15 of groundwater bodies in 2011 (Source: State of Environment Indications 2010-2011).

[23] http://mra.org.mt/hydrogeology/wfd/
[24] http://mra.org.mt/hydrogeology/wfd/wfd-identification-of-drinking-water-protected-areas/
[25] http://ec.europa.eu/environment/water/water-framework/pdf/CWD-2012-379_EN-Vol3_MT.pdf

	Over-abstraction and Salinisation	Chloride concentrations in groundwater result from seawater intrusion, as well as over-abstraction. In 2011 the threshold value for chlorides was exceeded in 6 out of 8 perched groundwater bodies and in all coastal aquifers, while it was not exceeded in the mean sea level aquifers (Source: State of Environment Indications 2010-2011).
Ecosystem Services (using CICES classification)	Provisioning – Nutrition – Water – Groundwater for drinking purpose (freshwater abstracted from groundwater layers or via ground water desalination for drinking); Provisioning – Materials – Water – Groundwater for non-drinking purposes (freshwater abstracted from groundwater layers or via ground water desalination for domestic use, irrigation, livestock consumption, industrial use etc); Regulation & Maintenance – Mediation of Liquid Flows – Hydrological cycle and water flow maintenance – Capacity of maintaining baseline flows for water supply and discharge e.g. fostering groundwater;	
Impacts on human well-being benefits	Health & Security	
Value	Health Value:	Drinking clean water is a very important component of a healthy diet and the health and beauty benefits are various.
	Economic Value:	In the Maltese Islands, the Water Services Corporation (WSC) is the main water provider, supplying freshwater through the municipal distribution network. This water originates from groundwater abstracted from the aquifers and from desalinated water produced in the 3 reverse osmosis plants present on the islands. In 2010 billed water consumption from the WSC increased marginally to 15.6 million m^3 (Source: State of Environment Indications 2010-2011).
	Social Value:	Water extracted from groundwater is used for household, agricultural and industrial uses. The groundwater exploitation rate in Malta (expressing groundwater extraction as a percentage of the recharge into the aquifers and using only actual measurements available by the Water Services Corporation since there is a complete lack of data about private groundwater abstraction) has shown a fluctuating trend from 2000 to 2008 and averages at 103.24%. This occurrence was the result of varying precipitation amounts, coupled with a diminishing artificial recharge (Source: NSO, 2010)[26]. On-farm surface water (either rainwater or groundwater collected in reservoirs) is the most common source of artificial irrigation in agriculture amounting to 51 %, followed by 31% being derived from on-farm ground water as revealed by the 2010 Agriculture Census.

Table 10 – Inland surface water bodies	
Ecosystem Description	Freshwater inland surface water bodies (mapped in Figure 3) are 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 though also one of the most species-rich habitats, albeit restricted in range. 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 since 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 *Potamon fluviatile* ssp. *lanfrancoi* (fauna) These

[26] NSO 2010 - *Sustainable Development Indicators for Malta 2010* [Online] Available from: http://www.nso.gov.mt/statdoc/document_file.aspx?id=2913

	pools are of great local interest since they represent the only natural standing water bodies in the islands. Various types of freshwater rockpools (= Habitats Directive Annex I Habitat 3170 - Mediterranean temporary ponds), occur across the Maltese Islands. Some of these are known to be quite transient, particularly those within karstic depressions in coralline limestone; others are more long-term. Sample rock pools have been assessed as part of an ongoing surveillance and monitoring process. Based on observation, it seems that some species like *Damasonium bourgaei* (flora) and *Triops cancriformis* (fauna) became rarer in the last 30 years, whilst micro-algal cover has increased in certain pools, replacing certain typical hydrophyte vegetation of Maltese ponds.  **Figure 3 – Freshwater Bodies in the Maltese Islands** (Source: MEPA, 2014)	
Ecosystem Condition	Within the WFD Framework, Malta designated 3 watercourses and 4 standing waters under the WFD protected area registry. These waters have all been monitored during the first implementation cycle of the Water Catchment Management Plan. The results of their ecological and chemical water quality will be included in the upcoming Second Water Catchment Management Plan.	
Main Pressures &Threats	Anthropogenic activities resulting in disturbance and degradation	Such activities include for instance: Discharges and Pollution to surface waters Dumping, depositing of dredged deposits Mining and quarrying Roads Improved access to site Introduction of alien and/or invasive species
Ecosystem Services (using CICES classification)	The provision of services by wetlands depends on their type, size and location. In Malta this ecosystem is inherently rare and services are limited due to inherent water scarcity not to mention lack of rivers and lakes. Provisioning – Materials – Water – Surface water for non-drinking purposes (collected precipitation, abstracted water, irrigation) Regulation & Maintenance – Mediation of waste, toxins and other nuisances (bioremediation, biological and bio-physicochemical filtration/sequestration/storage/accumulation, and dilution) Regulation & Maintenance – Mediation of Liquid Flows – Hydrological cycle and water flow maintenance & Flood Protection Regulation & Maintenance – Maintenance of physical, chemical, biological conditions – Lifecycle maintenance, habitat and gene pool protection Regulation & Maintenance – Maintenance of physical, chemical and biological conditions	

	– Water Conditions – Chemical condition of freshwaters (maintenance/buffering) Cultural – Physical interactions with biota, ecosystems and landscape – Experiential use (e.g. bird watching) Cultural – Physical interactions with biota, ecosystems and landscape – Physical use (e.g. walking, hiking) Cultural – Intellectual and representative interactions – scientific (subject matter for research), educational, heritage, and aesthetic Cultural – Other interactions (existence and bequest)	
Impacts on human well-being benefits	Safety & Security	
Value	Health/Security	Freshwater inland water bodies, especially valley watercourses play an important role in natural flood control by draining higher ground and channelling surface rainwater runoff downstream and into the sea.
	Economic Value:	The importance of freshwater inland water bodies in terms of indirect economic value is with respect to groundwater recharge since Malta does not harvest freshwater fish for food.
	Social/Cultural Value:	Apart from their high ecological value, valley watercourses also have a recreational value in Malta namely for walking and picnics. Surface water is not presently being used as a potable water source.

Table 11 - Marine Inlets and Transitional Waters - Coastal Wetlands (Saltmarshes & Salines)	
Ecosystem Type	Transitional waters in Malta are shown mapped in Figure 4.

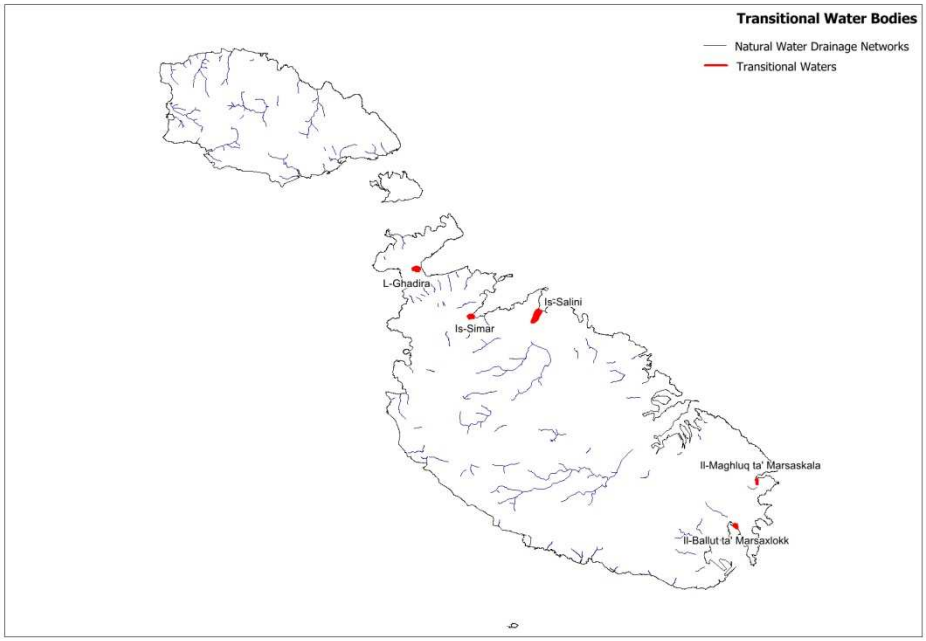


Figure 4 – Transitional Water Bodies

(Source: MEPA, 2015)

When considering the surface area (based on the number of 1x1 km grid cells in which the presence of the habitat type has been recorded) of habitats listed in Annex I to the Habitats Directive and that would be considered to qualify as "saline marshlands", values are as follows:

1150 - Coastal Lagoons = 7km^2

1310 - *Salicornia* and other annuals colonizing mud and sand = 6km^2

1410 - Mediterranean salt meadows (*Juncetalia maritimi*) = 9km^2

	Saline marshlands (categorised under Habitat Type 1150) are very scarce in Malta, with only a few extant noteworthy marshes, and another few sites which are highly degraded. Most of the marsh areas are normally separated from the sea due to access roads (such as at L-Għadira, Is-Simar, and Il-Magħluq ta' Marsaskala) and often end up as pools of shallow coastal brackish water, with varying salinity dependant on rainfall and storms (and the related water flow), evaporation and sea-spray. 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 *Juncus acutus*, *Juncus maritimus*, *Bolboschoenus maritimus* and *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. Saline marshlands or 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. Mediterranean salt meadows (*Juncetalia maritimi*) (Habitat 1410) - This habitat type is very rare in the Maltese Islands, as are its representative species, some of which are critically endangered. Many areas are affected by their very small size and the limited space for habitat type regeneration and extension and anthropogenic disturbance. Sites such as L-Għadira and Is-Simar are protected as Natura 2000 sites and as Ramsar Sites. *Salicornia* and other annuals colonizing mud and sand (Habitat 1310) - This community is found in saline marshlands and similar habitats. Since such marshlands are very small in extent in the Maltese Islands, a mosaic community is often found, with this community co-occurring within the same few square metres with habitat types 1410 (Mediterranean salt meadows) and 1420 (Mediterranean halophilous scrubs), from which it is differentiated in terms of the dominance of annuals, and less rush and scrub cover respectively.	
Ecosystem Condition	Information on the condition of Annex I habitat types found in Malta that would be interpreted at "saline marshlands" is provided in Sub-section 1.3.4 of Malta's 5NR on the basis of Malta's Second Article 17 report in line with the Habitats Directive. Within the WFD Framework Malta designated 3 transitional waters under the WFD protected area registry. These waters have been monitored during the first implementation cycle of the Water Catchment Management Plan. The results of their ecological and chemical water quality will be included in the upcoming Second Water Catchment Management Plan.	
Main Pressures & Threats	Pollution	Discharges and pollution to surface waters
	Anthropogenic activities associated with use of the site	Activities include for instance: Inappropriate afforestation or artificial planting, especially when considering *Pinus* and *Tamarix* species Trampling, overuse Disposal of waste Removal of sediments Hydromorphological alterations which lead to lack of circulation Coastal erosion
	Invasive alien species	Invasion by alien species (e.g. *Arundo donax*, *Aster squamatus*, *Acacia* spp.)
Ecosystem Services (using CICES classification)	Provisioning – Materials – Biomass – Materials from plants for direct use (e.g. reeds); Regulation & Maintenance – Lifecycle maintenance, habitat and gene pool protection – Maintenance of Habitats (e.g. habitat for waders, and brackish species; species diversification); Regulation & Maintenance – Soil formation & composition; Cultural – Physical & experiential interactions (e.g. walking);	

	Cultural – Intellectual and representative interactions – Scientific (subject matter for research), Educational, Aesthetic and Recreational (bird watching); Cultural –Existence (enjoyment provided by the landscape) and Bequest (Willingness to preserve plants, animals, ecosystems, landscape for future generations, moral perspective);	
Impacts on human well-being benefits	Security & Well-being	
Value	Security Value:	Saline marshlands are important for sheltering against coastal erosion as well as attenuation of waves and storms.
	Economic Value:	Unlike in other countries, saline marshlands are not exploited for food production in Malta.
	Nature Watch & Education Value:	Protected saline marshlands - L-Għadira and Is-Simar - are important amongst bird watchers due to their value as stop-over sites for migratory waterfowl and waders. These areas are also visited by school children for education purposes.

Table 12 – Marine Inlets and Transitional Waters & Coastal Waters – Benthic Habitats (Littoral & Shallow-sublittoral)	
Ecosystem Types	When considering the broad-scale ecosystem categories on "marine inlets and transitional waters" and "coastal waters" the benthic habitats mentioned hereunder are present in both. Information is extracted from the Report on Benthic Habitats that was compiled as part of Malta's Initial Assessment under the MSFD Framework[27]. The difference between ecosystem categories as explained is with respect to the representation of spatial dimension, where for the category on "marine inlets and transitional waters" it is between 0 to 50m depth while for "coastal waters" it is 50 to 70m depth[28]. Littoral Rock and Biogenic Reef [rocky gentle sloping shores that support macroalgal communities e.g. *Cystoseira* spp. and vermetids e.g. *Dendropoma* spp., and the sheer vertical cliffs that support biogenic concretions]; Littoral Sediment [includes sandy beaches, shingle beaches and mixed sand and shingle beaches restricted to small pockets along the Maltese coast occupying circa 2.4% of the Maltese coastline or an estimate of 6.5km. In general, circa 6km of the coastline is sandy, while c. 0.6km is shingle] Shallow sublittoral rock and biogenic reef [includes gentle and steep slopes of bedrock dominated by photophilic macroalgae, mainly phaeophytes in shallow waters with chlorophytes becoming more important with increasing depth; Underwater cliff faces or drop-offs generally consists of photophilic macroalgae overlying a sciaphilic assemblage of encrusting sponges, corals, hydroids and bryozoans; and Boulder fields characterised by detached fragments of rock >50cm in diameter over an extensive slope] Shallow sublittoral sediment: (i) *Posidonia oceanica* meadows [Of the five species of sea-grasses reported from the Maltese Islands (two presumably extinct, one quite rare), the most important are *Posidonia oceanica* and *Cymodocea nodosa*. The former, which is the most important component of this habitat type, is relatively abundant in the territorial waters of the Maltese Islands. *Posidonia meadows* in Maltese waters are found in different ecomorphosis, on bedrock and on sand. Some areas produce thick matte walls, allowing for colonisation by an array of photophillic algae. They support a wide variety of organisms of conservation interest, one particularly important species being *Pinna nobilis*. Posidonia oceanica is quite abundant in Maltese waters, being mostly present along the north-eastern to south-eastern coast, due to its gentler sloping nature. Although there are parts with a somewhat patchy distribution, dense meadows are found in other areas. Locally, *Posidonia oceanica* meadows occur as two main subtypes: the continuous

[27] http://www.mepa.org.mt/file.aspx?f=10330

[28] See – European Commission Technical Report – 2013 – 067 on Mapping and Assessment of Ecosystems and their Services – An analytical framework for ecosystem assessments under Action 5 of the EU Biodiversity Strategy to 2020.

	meadows and the reticulate (or non-continuous) meadows (seagrass beds intermixed with channels and areas of bare sand or bedrock). Seagrass beds can also be dominated by *Cymodocea nodosa* and generally occurs throughout the infralittoral at depths less than 1m down to about 45-48m and are best developed on muddy sand bottoms] and (ii) Shallow Sublittoral fine and coarse sediments [include the biocoenosis of infralittoral stones and pebbles and the biocoenosis of infralittoral gravels].	
Ecosystem Condition	Malta's Initial Assessment undertaken in compliance with the MSFD provides the following overall outcome of status: Littoral Rock and Biogenic Reef – *Cystoseira* communities in north-eastern assessment area = good; Littoral Sediment – selected Sand and Shingle Beaches = moderate; Shallow sublittoral rock and biogenic reef – Photophilic macroalgae in north eastern assessment area = good; Shallow sublittoral sediment in north-eastern assessment area = good; and *Posidonia oceanica* meadows in north-eastern assessment area = good.	
Main Pressures & Threats	Pollution (through discharges) that affects water quality	Degradation in water quality via nutrient enrichment associated with sewage outfalls and overflows, port operations and agricultural runoff is considered to be the major threat to *Cystoseira* communities on lower mediolittoral rock and also to shallow sublittoral rock communities. All municipal wastewater is now being treated and second class treated wastewater is currently being discharged from wastewater treatment plants. Localised discharges of brine water from desalination plants and of cooling waters from power plants also affect water quality with associated impacts on benthic communities characterising shallow sublittoral rock and *Posidonia* meadows. In the case of the latter habitat increased epiphytic growth, a regression in the extent of *Posidonia* and the replacement of the seagrass with *Cymodocea nodosa* and photophilic algal assemblages occurs. Nutrient enrichment due to aquaculture activities lead to changes in sediment characteristics of *Posidonia* meadows, and with disturbance of such sediments through cage moorings and shading (by the cages). Shipping and port-related activities, particularly dredging within ports, are also known to have significant impacts on *P. oceanica* meadows through physical loss and damage, the latter as a result of sediment re-suspension and associated increase in turbidity.
	Cleansing activities	In view of their recreational use, beaches are regularly cleaned. Although the degree of impact of such activity is largely dependent on the mechanisms used, it is considered to be a potential source of disturbance to the beach fauna. Furthermore, the removal of *Posidonia* banquettes from beaches may expose such beaches to erosion processes and potentially lead to a reduction in organic matter on the beaches.
	Activities that result in the increase in turbidity	*Cystoseira* communities are negatively affected by increase in turbidity as a result of anthropogenic activities such as dredging, boating and port operations, as well as a result of run-off.
	Coastal development related to harbour, recreation or road development infrastructure	Replacement of gently sloping rocky shores with a vertical artificial coastline results in changes in the composition of algal communities; The main pressure on the extent of beaches along the Maltese coastline arises from interferences with processes related to sand accretion and erosion, as a result of development on the

		coastline as well as development on land. Development on the coastline, such as the construction of jetties, would result in changes in the hydrodynamic regime of coastal waters which in turn may lead to erosion of sandy beaches. Development on land on the other hand would reduce the sediment supply from terrestrial valley systems. Both types of development have resulted in a reduction in the extent of a number of sandy beaches.
	Recreational activities	SCUBA diving is the main source of pressures on the submerged portion of emergent sea caves and underwater caves. In the protected Qawra/Dwejra area, frequent visits in caves by SCUBA divers are known to have resulted in destruction of fragile bryozoan colonies growing on the roof of the caves[29]. Boating, mooring and anchoring, especially during the summer months, pose threats to shallow sublittoral rock communities and *Posidonia* meadows due to physical damage and interference with hydrological processes. Recreational activities constitute a major threat in view of disturbance to the ecology of beaches and their associated macrofaunal assemblages.
	Exploitation/species extraction	In line with EC Regulation 1967 of 2006, the use of towed fishing gears on seagrass meadows is prohibited. However these meadows can be affected by other types of fishing taking place on *P. oceanica* meadows such as trammel nets and fish traps.
Ecosystem Services (using CICES classification)	Provisioning – Nutrition – Biomass – Wild Animals and their outputs (marine fish and shellfish) Provisioning – Materials – Genetic material for all biota (DNA from wild plants, algae and animals for biochemical industrial and pharmaceutical processes e.g. medicines, fermentation, detoxification; bio-prospecting activities e.g. wild species used in breeding programmes etc.) Regulation & Maintenance – Mediation of waste, toxics and other nuisances Regulation & Maintenance – Mediation of (Mass & Liquid) Flows Regulation & Maintenance – Maintenance of physical, chemical and biological conditions – Lifecycle maintenance, habitat and gene pool protection (e.g. primary and secondary production, larval and gamete supply, food web dynamics, habitats for nursery and reproduction e.g. seagrasses) Regulation & Maintenance – Maintenance of physical, chemical and biological conditions – Water conditions – Chemical condition of salt waters (e.g. buffering of seawater column) Regulation & Maintenance – Maintenance of physical, chemical and biological conditions – Atmospheric composition & climate regulation (greenhouse gas/carbon sequestration, transport of carbon in the oceans) Cultural – Physical interactions with environmental settings, biota, ecosystems and seascapes – physical and experiential interactions (e.g. snorkelling, diving, boating, leisure fishing) Cultural – Intellectual and representative interactions – scientific (subject matter for research), educational, heritage, entertainment, and aesthetic Cultural – Spiritual, symbolic and other interactions (existence and bequest)	
Impacts on human well-	Nutrition, Health & Enjoyment	

[29] Borg J. A., Micallef S. A., Pirotta K., Schembri P. J., 1997. Baseline marine benthic surveys in the Maltese Islands (Central Mediterranean). In E. Ozhan (ed.) Proceedings of the third international conference on the Mediterranean coastal environment, MEDCOAST ë97, November 11-14, 1997, pp 1-8 + v figs.

being benefits		
Value	Health Value:	Finfish and shellfish are an important source of protein in a healthy diet. The take up inorganic nutrients, capture of suspended metals, dissipation of chemicals as well as filtration benefits water quality by helping to reduce the risk of eutrophication and also is important in the regulation of pollution. Clean and healthy bathing waters in accordance with standards set at EU level are essential for the health of bathers during the summer months. For 2012, 84 bathing water bodies were in excellent quality while 3 were in good water quality.
	Economic Value:	Fisheries – *Posidonia* meadows are crucial nursery grounds and refugia (protection) for commercial finfish and shellfish, including juveniles and marine larvae. *Posidonia* meadows provide a physical refuge and food for a number of marine biota, and support commercial fisheries through their role as nurseries. Tourism – As an island tourism is one most important sectors that contribute to Malta's Gross Domestic Protect. This industry relies on the availability of blue seas, beaches, water sports, diving attractions, visitation to sea caves as well as seafood culinary delicacies. Marine Aquaculture - Marine-based aquaculture (mariculture) is closely linked to the marine ecosystem especially when dealing with the practice of marine cage fish farming. As documented in Malta's Report on Economic Sectors on the basis of information acquired from the SEA on Malta's Aquaculture Strategy, there are currently six operators making use of nine marine sites for the culture of Closed Cycle Species seabass and seabream, a small production of *Argyrosomus regius* and fattening of *Thunnus thynnus thynnus*. Cages used for the culture of sea bass, sea bream and meagre are located approximately one kilometre offshore, while tuna farms are situated approximately 2km offshore, with two tuna pens located within the Aquaculture Zone 6km off the south eastern coast of mainland Malta[30,31]. The productivity of fish farming relies on several factors, including an unpolluted and healthy marine environment and good water quality in which to culture healthy fish. Aquaculture is also dependent on wild-caught fish for the production of fishmeal (such as wild mackerel), which is then used to feed the farmed species. In the case of tuna penning, tuna are wild-caught for eventual fattening in pens. The gross output of the aquaculture industry, including fish farming, amounted to €108.4 million in 2012, an increase of 116.0 per cent from €50.2 million in 2011. This was due to positive changes in all the output categories of the aquaculture industry. The gross value added of the aquaculture industry in 2012 increased to €25.8 million from €10.4 million in 2011. Taking fixed capital consumption and exchange rate differences into consideration, the aquaculture industry had a

[30] http://www.mepa.org.mt/file.aspx?f=11222

[31] Adi Associates Environmental Consultants Ltd., 2012. Strategic Environmental Assessment on Malta's Aquaculture Strategy - Environmental Report.

		positive factor income of €20.8 million, an increase of €12.1 million over 2011. (Source: NSO, 2012)[32].
	Security value	Natural hazard protection - Seagrasses (through their leaf morphology [flat, flexible and ribbon-shaped], and their rhizomes and extensive root system) help in the dissipation of wave and tidal current energy, which is an important function in preventing coastal erosion. They also stabilise the seabed.
	Research Value	Littoral and shallow-sublittoral communities have been the subject matter of graduate and post-graduate ecological research.
	Recreational and aesthetic value:	Beaches on the Maltese Islands constitute an important recreational resource. Due to the fact that they are restricted to small pockets along the shore, most beaches are subject to intense recreational use particularly during the summer season. The Diving Industry requires biodiversity-rich diving sites as well as presence of spectacular and unusual species.

Table 13 – Shelf (up to 200m) & Open (beyond 200m) Waters	
Ecosystem Types	Within the MSFD framework, the broad-scale ecosystem category on "shelf waters" comprises the habitats mentioned hereunder. Information is extracted from the Report on Benthic Habitats that was compiled as part of Malta's Initial Assessment under the MSFD Framework[33]. Shelf sublittoral rock and biogenic reef [Benthic communities associated with shelf sublittoral rock are poorly known in Malta]; and Shelf sublittoral sediment [Data collected by the fisheries trawl surveys carried out annually on soft sediments up to depths of 800m may shed light on the communities associated with shelf sublittoral sediment, which are otherwise poorly documented in Malta. This analysis is currently being undertaken through collaboration between the University of Malta (UoM) and the Department for Fisheries and Aquaculture (DFA). In general, shelf sublittoral sediments up to the 100m depth zone are characterised by sandy substrata, while at depths greater than 100m, muds prevail. Associations of coarse sediments with rhodoliths and mäerl beds constitute better known benthic communities of the shelf sublittoral. The major mäerl bed in Malta covers an extent of circa 20km^2 of the seabed off the North-eastern coast of Malta at 30-100m depth]; When instead considering the broad-scale ecosystem category on "open waters" the following habitats are included: Upper bathyal rock and biogenic reef [Marine habitats on rock at this depth stratum are not well-known in Malta, however through results of fisheries trawl surveys, the presence of various live deep-water reef-buildings corals is known]; and Upper bathyal sediment [Muddy sediments between 200-350m, within the 25 nautical mile Fisheries Management Zone are reported to support commercial species typical of deep waters. Bathyal muds off the Southwestern coast of Malta along the seabed adjacent to the near-vertical wall, harbour sessile octocorals *Isidella elongata* and *Funiculina quadrangularis*. These muds have been bioturbated by crustacean burrows and by grazing tracks of holothuroids and cidaroid echinoids. These species are typical of bathyal muds.]
Ecosystem Condition	Malta's Initial Assessment undertaken in compliance with the MSFD provides the following overall outcome of status: Shelf sublittoral sediment = good Assessment of status was not possible for the other benthic habitat types due to current state of information.

[32] NSO 2012 – Agriculture & Fisheries 2012 [Online] Available from: http://www.nso.gov.mt/statdoc/document_file.aspx?id=3846

[33] http://www.mepa.org.mt/file.aspx?f=10330

Main Pressures & Threats	Exploitation/species extraction	Some species associated with shelf sublittoral rock, such as *Corallium rubrum* may also be subject to exploitation, however this activity does not take place any longer (species is strictly protected under domestic law) and presumably the population of such species should be recovering from past overexploitation. Mäerl beds are threatened by fishing activities, particularly trawling, which can lead to physical and biological degradation of this benthic habitat. Fishing with trammel nets leads to selective removal and mortality of large rhodoliths possibly leading to long-term shifts in mäerl community structure. Upper bathyal sediment is subject to fishing activities, namely trawling for commercial species and possibly bottom long-lining. However, it should be pointed out that trawling within the Fisheries Management Zone is regulated in line with EC Regulation 1967 of 2006 hence the fishing pressure on this type of habitat within the Fisheries Management Zone would be less than that on the same habitats outside, which are known to be characterised by lower abundances and biomass of commercial species.
Affected Ecosystem Services (using CICES classification)	Provisioning – Nutrition – Biomass – Wild Animals and their outputs (marine fish and shellfish) Provisioning – Materials – Genetic material for all biota (DNA from wild plants, algae and animals for biochemical industrial and pharmaceutical processes e.g. medicines, fermentation, detoxification; bio-prospecting activities e.g. wild species used in breeding programmes etc.) Regulation & Maintenance – Mediation of waste, toxics and other nuisances Regulation & Maintenance – Mediation of (Mass & Liquid) Flows Regulation & Maintenance – Maintenance of physical, chemical and biological conditions – Lifecycle maintenance, habitat and gene pool protection (e.g. primary and secondary production, larval and gamete supply, food web dynamics) Regulation & Maintenance – Maintenance of physical, chemical and biological conditions – Water conditions – Chemical condition of salt waters (e.g. buffering of seawater column) Regulation & Maintenance – Maintenance of physical, chemical and biological conditions – Atmospheric composition & climate regulation (greenhouse gas/carbon sequestration, transport of carbon in the oceans) Cultural – Intellectual and representative interactions – scientific (subject matter for research)	
Impacts on human well-being benefits	Nutrition, Health & Enjoyment	
Value	Health Value:	Finfish and shellfish are an important source of protein in a healthy diet.
	Economic Value:	Fisheries – The Fisheries Sector is reliant on the continued provision of commercially important fish stocks and other marine resource to supplement food production. In 2012, total fish landings at the official market amounted to 1,042 tonnes, yielding a wholesale value of €6.3 million. (Source: NSO, 2012)[34].
	Social Value:	Jobs reliant on the marine environment: A total of 2,969 licensed fishing vessels were registered as at the end of 2012 (Source: NSO, 2012)[35].

[34] NSO 2012 – *Agriculture & Fisheries 2012* [Online] Available from: http://www.nso.gov.mt/statdoc/document_file.aspx?id=3846

[35] NSO 2012 – *Agriculture & Fisheries 2012* [Online] Available from: http://www.nso.gov.mt/statdoc/document_file.aspx?id=3846

	Research Value	The marine ecosystem is of great interest to scientific researchers. As noted in the report on benthic habitats drawn up as part of Malta's Initial Assessment as required by the MSFD, certain bathyal habitat types are still not well known.

1.2.2 Biodiversity Valuation in the Maltese Islands

The Malta Environment and Planning Authority (MEPA) undertook in 2014, during the months of March and April, a preliminary exercise aimed at assessing biodiversity valuation in the Maltese Islands via a questionnaire-based survey. This was open to the public for a period of four weeks. The purpose was: (1) to elucidate whether citizens in Malta recognise the true meaning of biodiversity, (2) to help analyse the link of citizens living in the Maltese Islands with biodiversity, and (3) to explore how individuals value biodiversity in the country.

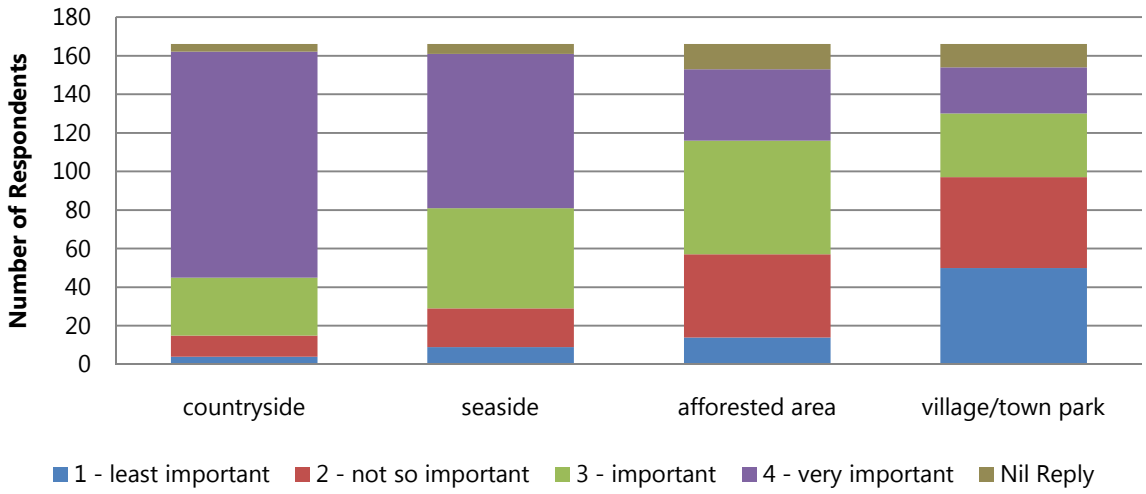
The circulation of the questionnaire was undertaken with the assistance of the Human Resources Unit and Communications Office within MEPA, the Malta-EU Steering and Action Committee (MEUSAC), the Policy Development and Programme Implementation Directorate and the Department for the Environment and Climate Change within the Ministry for Sustainable Development, the Environment and Climate Change (MSDEC), the Department of Information (DOI) within the Office of the Prime Minister (OPM) and the University of Malta (UOM), including the assistance of the Department of Biology. Some of the results of this survey are documented in this sub-section of Malta's 5NR. Others are documented elsewhere in Malta's CBD 5NR according to relevant to the report.

Thirteen questions were posed focusing *inter alia* on what is meant by biodiversity and where it is found in the country, preferred localities and reasons for frequenting the countryside, importance of ecosystem services, willingness-to-pay in the context of protected areas, ways of supporting biodiversity and, finally awareness of Malta's National Biodiversity Strategy and Action Plan (NBSAP). The questionnaire applied closed-ended questions in that the respondents were limited to a fixed set of replies. The questionnaire included yes/no questions or multiple choice questions, where the respondent was required to tick or mark the chosen reply/replies. Scaled questions were also used and this involved ranking answers according to importance. The importance ranking was meant to reflect the appreciation or emotional value, and in some case utilitarian value, that the individual attached to the issue in question. Some questions included an "open" answer category after the list of possible answers, to enable respondents to supply their own answer, such as when giving examples or reasons for their reply.

A total of 166 responses were received from individuals. Out of these, 98 (59%) were male, while 68 (41%) were female. The majority were Maltese (156/166; 94%) whereas 10 respondents (6%) had a foreign or dual nationality but are currently residing in Malta. The most represented age bracket was between 36 and 45 years (42/166; 25%) followed by those individuals of the age between 46 and 55 years (39/166; 24%). The least represented was for the age bracket 16-25 years (21/166; 13%).

One question queried respondents which out of the countryside, seaside, afforested areas and village/town parks or green areas, individuals preferred for outdoor recreation using a ranking system ranging from least important (1) to very important (4). Overall, the countryside is by far the most valued for outdoor recreation with 71% (117 out of 166) respondents ranking it a 4 (i.e. very important), while the least important were village/town parks with 58% (97 out of 166) respondents ranking it either a 1 or 2. This does not necessarily reflect the value attributed at individual level. Some respondents clearly indicated preference for natural habitats as opposed to man-made habitats. Others in contrast ranked afforested areas as more important, while some assigned them with an equal ranking. The overall picture is of an increasing trend in importance/value from man-made as least important to natural habitats as most important (see Chart 1 below).

Chart 1 – Question - Which do you value most for outdoor recreation?



For the countryside, respondents were in addition asked which, out of three specialised habitat types, they valued most. Responses were as follows (in order of decreasing preference): natural/semi-natural woodland (38%), valleys (35%) and cliffs (27%). Respondents were also asked to specify up to three localities they favoured for outdoor recreation in Malta and in Gozo (but not in Comino which was still addressed but without defining specific locations therein). All chosen single localities are mapped (showing general location) for Malta and Gozo as shown respectively by Figures 5 and 6.

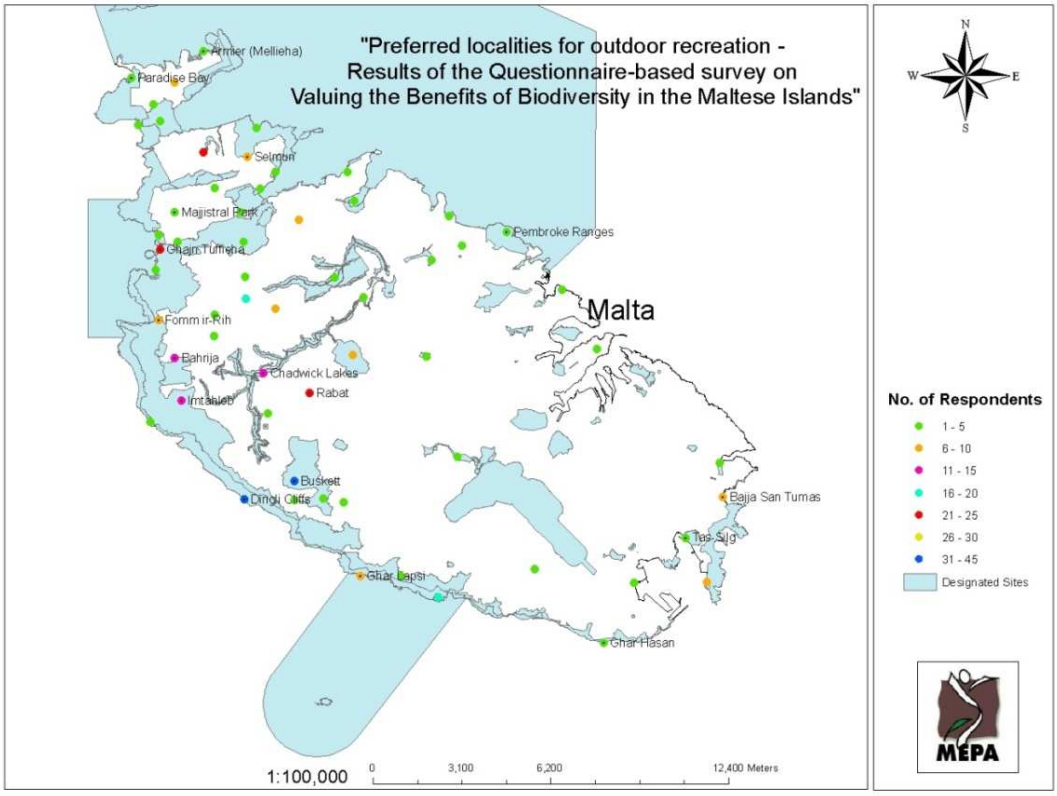


Figure 5 - MALTA - Preferred localities for outdoor recreation according to number of respondents who mentioned that particular locality

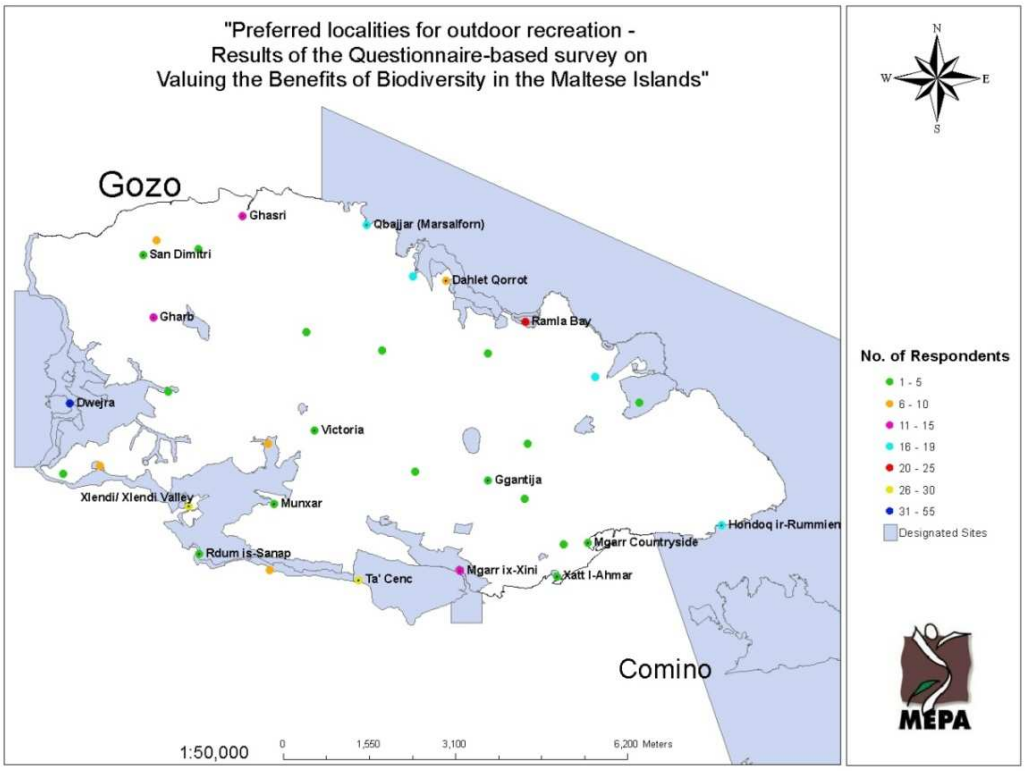


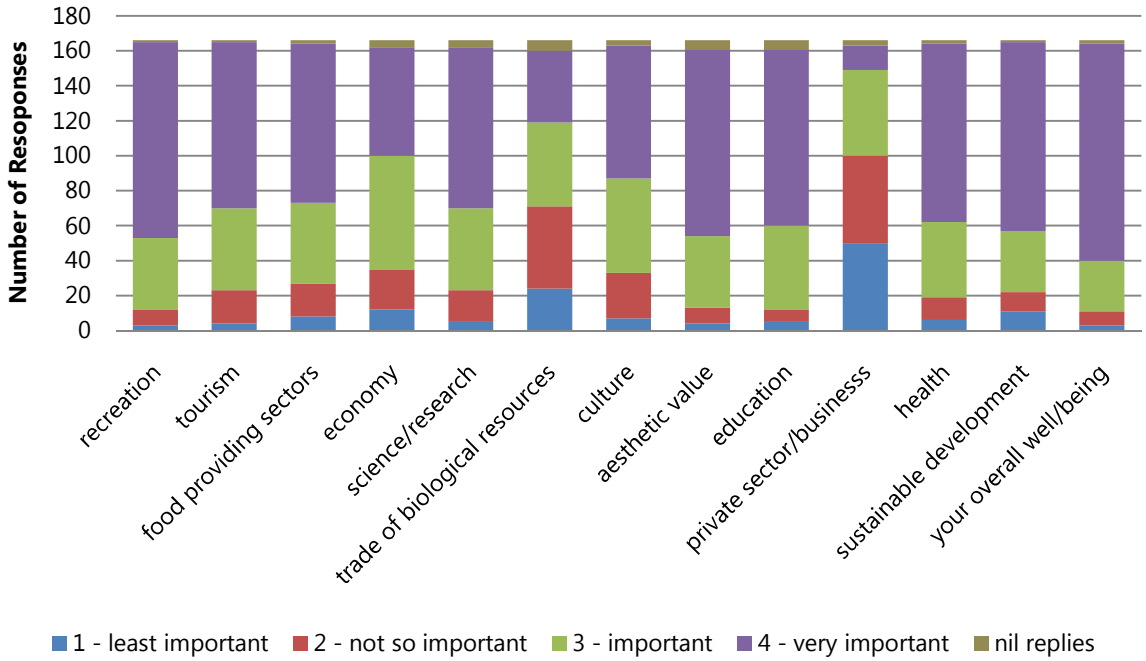
Figure 6- GOZO - Preferred localities for outdoor recreation according to number of respondents who mentioned that particular locality

These maps also indicate which localities fall within or adjacent to designated sites[36]. All in all the whole northern area of Malta (Mellieħa area) and the north-western cliffs (harbouring the very popular beaches of Għajn Tuffieħa, Golden Bay and Ġnejna Bay) to south-western cliffs are clearly favoured. Localities in the north-eastern coastal areas (from Daħlet il-Fekruna to Selmun) and the north-eastern to eastern coastal strip (from Buġibba to Pembroke) are also sought for outdoor recreation. Topmost favoured localities in Malta according to respondents include Dingli Cliffs and Buskett, while areas further inland include Rabat and environs and the Mġarr/Binġemma/Dwejra area. When considering the favoured localities in Gozo, those localities, which received the most responses, are Dwejra, Ta' Ċenċ, Xlendi and Ramla Bay. Hence, coastal areas (in particular to the west, south and east parts of the island) are again favoured for outdoor recreation.

The survey also sought to explore how important citizens viewed biodiversity for different sectors (e.g. tourism, food providing sectors, private sector) as well as for other issues that are of priority to society, such as health, economy and sustainable development, and ultimately to that person's overall well-being. The results are shown in Chart 2 below.

[36] Mapped designated sites are the following: Historical Trees Having an Antiquarian Importance, Tree Protection Areas, Areas of Ecological Importance and/or Sites of Scientific Importance; Bird Sanctuaries, Species Areas of Conservation – National Importance, Special Areas of Conservation - International Importance, Nature Reserve (Islands), Special Protection Areas, Protected Beaches and Nature Reserve (Filfla).

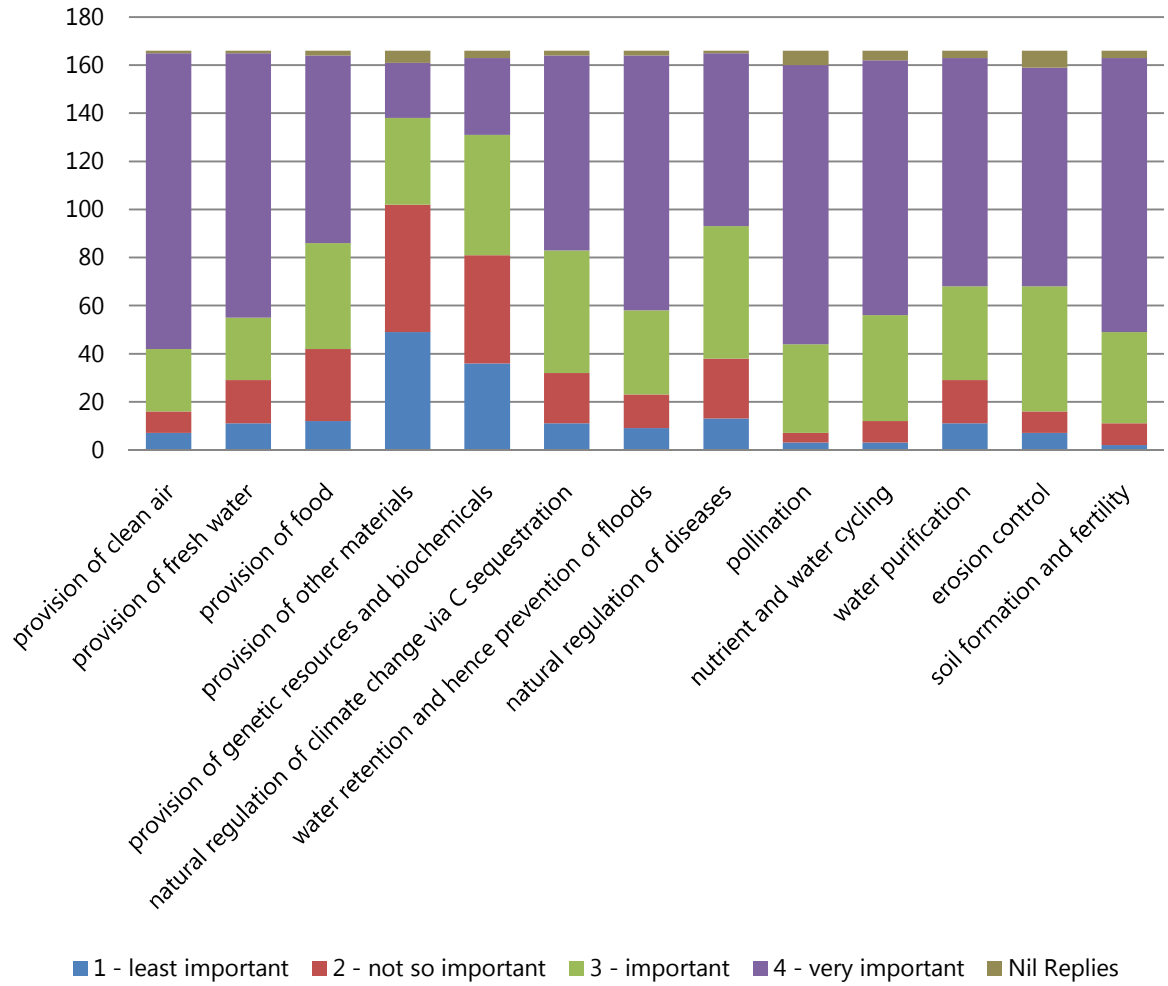
Chart 2 – Question – How important is biodiversity for...



Biodiversity is viewed as least important or not so important (scorings of 1 and 2 respectively) namely for the private sector/business (100 respondents out of 166; 60%), followed by trade of biological resources (overall 71 respondents out of 166; 43%). The majority of respondents (124 out of 166; 75%) highly value biodiversity for their overall well-being, scoring it a 4. When combining scorings of 3 (important) and 4 (very important), this increases to 92% (153 out of 166) of respondents. Also highly valued (scorings of 4) is the importance of biodiversity for recreation (112/166; 68%), sustainable development and aesthetic value (at 65% each), followed by health and education (at 61% each). The biodiversity value for food providing sectors ranked more or less ninth out of the thirteen categories given under this question.

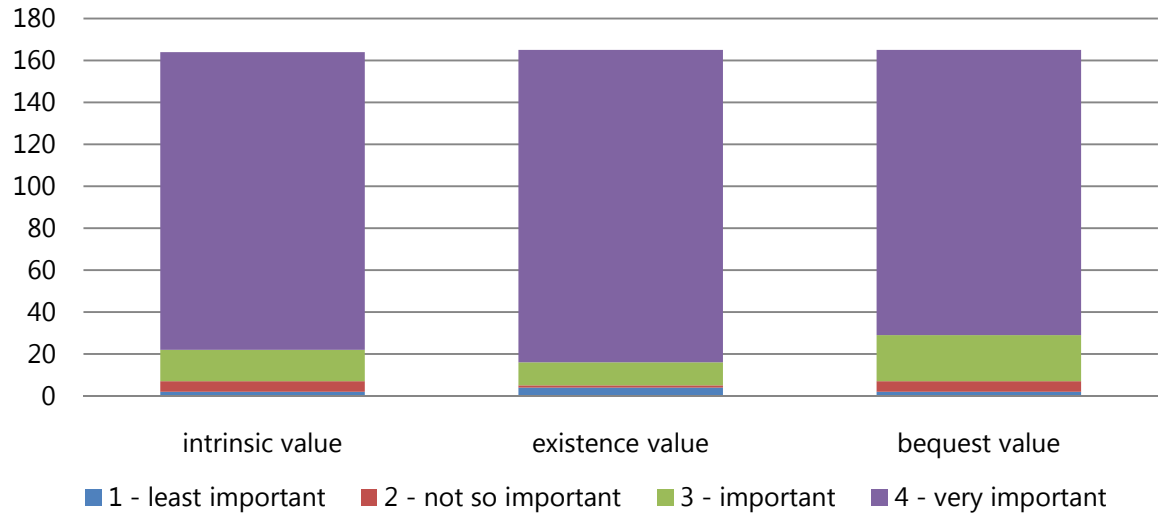
Another question assessed how respondents attributed value of biodiversity for provisions, regulating and supporting ecosystem services. Replies are shown in the Chart 3. When considering provisioning services, and taking into account the combined scorings of 3 and 4, biodiversity is mostly valued by respondents for the provision of clean air (149/166; 90%), followed by fresh water (136/166; 82%) and less so for the provision of food (122/166; 74%), genetic resources and biochemicals (82/166; 49%) and, other materials, such as wood and fibre (59/166; 36%). The latter received overall the highest response rate for the least important option (scoring of 1 = 49/166; 30%). When grouping the scorings of 3 and 4 for regulating services, respondents view biodiversity mostly important for pollination (153/166; 95%; 123 respondents ranked it a 4, while 37 respondents ranked it a 3). In contrast, respondents view biodiversity least important for natural regulation of diseases, natural regulation of climate change and water purification. The importance of biodiversity in relation to supporting services ranked the highest for soil formation and fertility (116 respondents ranked it a 4, and 37 ranked it a 3). Cultural services, i.e. the non-material benefits derived from ecosystems such as recreation, aesthetic value, and education were addressed under the previous question. Results in this case (see Chart 2) showed that biodiversity was mostly valued for recreation and aesthetic value.

Chart 3 – Question – How important do you view Malta's biodiversity for the following ecosystem services?



The views of respondents on non-use values as well as the intrinsic/inherent value of biodiversity were also sought in the questionnaire. Each respondent was questioned how important he/she viewed the need to safeguard Malta's biodiversity for biodiversity itself (intrinsic value), for the continuity of the survival and existence of diverse animal and plant species native and endemic to the Maltese Islands (existence value) and for future generations (bequest value). The results are portrayed in Chart 4. There was also the option to tick the reply that it is not important to safeguard Malta's biodiversity. This however was not ticked. Overall, all three types of values were viewed as very important by respondents (scoring of 4) as follows (in increasing order): bequest value = 136/166 (82%); intrinsic value = 142/166 (86%); and existence value = 149/166 (90%).

Chart 4 – Question – How important do you view the need to safeguard Malta's biodiversity for its …



Additional questions are addressed in Sub-section 2.12 (in relation to NBSAP Measure PC1) and Sub-section 3.1 (in relation to Aichi Target 1 and 17).

1.2.3 Economic and Social Importance of the marine Environment

The importance of biodiversity to human well-being and the socio-economic development of the Maltese Islands has been the subject matter of various assessments undertaken in relation to requirements of various European Union Directives.

Malta as a small island state is greatly dependent on the marine environment both for marketed activities undertaken by economic sectors, and non-marketed actions undertaken by recreational and other sectors in Malta[37]. This has indeed been substantiated by the findings of the economic and social analysis (ESA) of the direct use made of the marine environment in line with the requirements of the Marine Strategy Framework Directive (Article 8 paragraph 1)[38]. When considering the activities engaged by economic sectors, it is estimated that approximately 15.4% of Malta's economy is dependent on the marine environment[39] for one of the following reasons:

- the marine waters provide resources that are required directly or as an intermediate consumption by these sectors;
- the marine environment is used as a direct/indirect input into the product or service provision of these sectors; or
- the marine environment acts as a sink for waste and/or by-products produced by these sectoral activities.

[37] Non-marketed activities also include activities that are marketed but the price charged for their consumption is not a true reflection of their worth to the economy. Potable water (in the form of desalinated sea water) is an example of this.

[38] AEE Consortium (2013). *A report on the economic and social analysis of the use of the marine waters and of the costs of degradation of the marine environment as defined by the MSFD, stating assumptions and sensitivity of analysis and integration of this report in the MSFD Initial Assessment.*

[39] This reflects the average marine dependence over the period 2006-2012.

The ESA is also intended to contribute towards the development of the framework on drivers, pressures, state, impact and response (DPSIR framework) by assessing how economic and non-marketed activity is causing undue pressure on the marine environment and the ensuing impacts generated. While not assigning a monetary value to marine resources, this assessment is considered to provide a preliminary indication of the importance of marine biodiversity to human well-being and socio-economic development.

When considering the effects that economic activity has on the marine environment, it is estimated that the activities of 15.4% of the economy (i.e. the marine-dependent economy) cause approximately 11.7% level deterioration in the marine environment. With respect to finding out which economic activities would be affected if the marine environment (or its use) were to be degraded, the assessment documents that environmental degradation would be seen to be most harmful, *inter alia* to the fishing and aquaculture sector, tourism sector as well as the group of economic sectors comprised of energy generation, water abstraction, waste and wastewater activities. Based on an assumption of a constant level of degradation resulting from the pressures identified on the marine environment, the impact of environmental degradation on the economy at large is estimated to amount to 0.4%[40] in terms of lost Gross Value Added.

In addition to the ESA report, a report on economic sectors was also drawn up[41]. The latter report includes brief descriptions of the economic sectors deemed relevant to the MSFD Initial Assessment for Malta. The report provides spatial information on the location of the activities associated with the economic sectors where possible; links the sectors to potential pressures and impacts on the marine environment; and refers to the outcome of the MSFD economic and social analysis where deemed necessary. The economic sectors that are addressed by the report comprise aquaculture, underwater pipelines and cables, dredging, maritime transport, leisure and recreation, hydrocarbon exploration and exploitation, coastal defence, military defence, renewable energy, desalination and water abstraction, and waste disposal.

1.3 Changes in status and trends of biodiversity that have occurred or become known since last submitted national report by Malta

1.3.1 Conservation status of species (excluding birds)

Since its last national report to the CBD, Malta carried out its second assessment of the conservation status of species of European Community Importance that are found in the Malta in compliance with reporting obligations of the EC Habitats Directive. The results of the first assessment (2007) and second assessment (2013) are compared in Chart 5, overleaf and detailed in tables 14 and 15 when considering terrestrial (MED) and marine (MMED) species, respectively. Details regarding habitat assessments follow in sub-section 1.3.4 of Malta's 5NR.

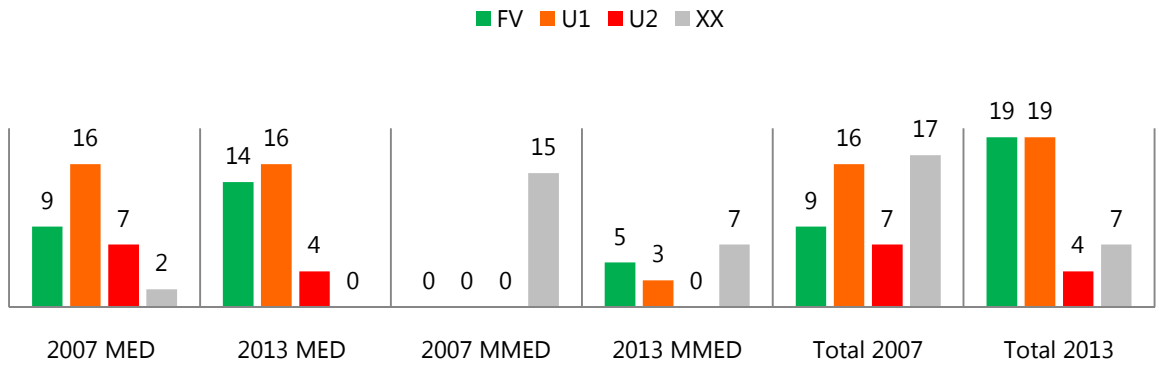
Detailed assessments were considered for 52 species, for which there is an increase of 20% being in a favourable conservation status, from 20% to 40%, when considering all species reported on (except occasional species). However, one should note that such change is not an actual genuine change, but mostly due to more accurate data or due to the use of different thresholds. Malta has also reported the presence of five occasional species, these being one fish and four marine mammals. Chart 5 depicts the status of 49 species which have been included in the final conservation status assessment both in 2007 and 2013. Chart 6 on the other hand depicts the status of all of the species for which a

[40] The loss in GVA is considered to be a level loss. This implies that the loss of 0.4% occurs once and not on an annual basis. It is, however, considered to be a permanent loss.
[41] http://www.mepa.org.mt/file.aspx?f=11222

detailed assessment was considered in 2007 (55) and in 2013 (52) [42]. Such values all exclude occasional species, since these are not considered in statistical appraisals.

Chart 5 - Comparison between the 2007 and 2013 assessments of overall conservation status of 49 species of Community Interest in Malta*

*** considers only those species which have been both been included in the final 2007 and 2013 conservation status assessments**



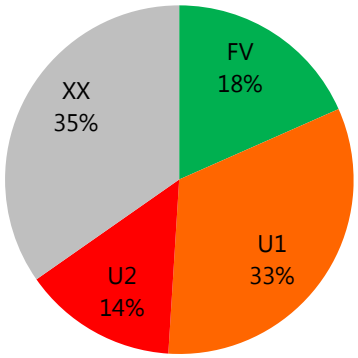


Chart 5 (a) - Overall Conservation Status in 2007 for all species*

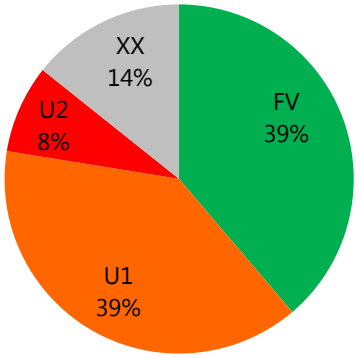


Chart 5 (b) - Overall Conservation Status in 2013 for all species*

[42] 55 species, less 3 *Podarcis* sub-species, *Alosa*, *Globicephala* and *Grampus*; 52 species, less *Nyctalus*, *Hypsugo*, and 1 *Pipistrellus* species

Chart 6 - Comparison between the 2007 and 2013 assessments of overall conservation status of 52 species of Community Interest in Malta*

*** considers all species included in the final 2007 and 2013 conservation status assessments**

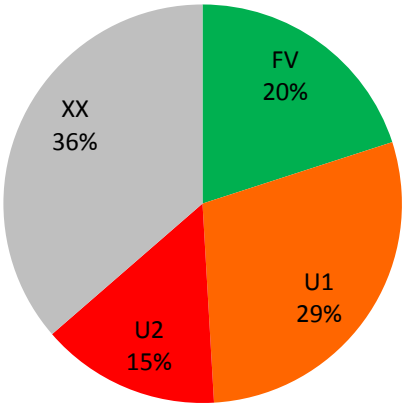


Chart 6 (a) - Overall Conservation Status in 2007 for all species

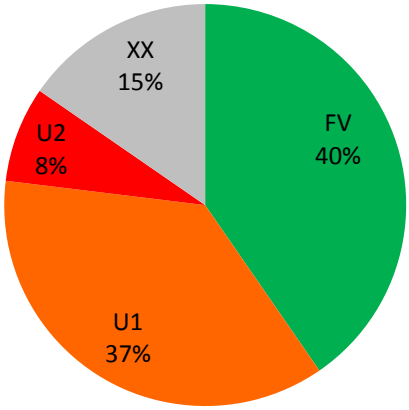


Chart 6 (b) - Overall Conservation Status in 2013 for all species*

The list of terrestrial species of Community importance found in Malta has been extended since the first assessment carried out in 2007 to two more terrestrial species, these being pipistrelles - *Pipistrellus pipistrellus* and *Hypsugo savii* – two bat species which have recently been confirmed from Malta. Additionally, through new data, another bat species, *Nyctalus noctula*, which was previously considered occasional, is most probably found as a resident in small numbers, while being a migrant species; further information would be required to confirm this or otherwise. As a note, when considering *Podarcis filfolensis*, the assessment carried out in 2007 considered the four subspecies separately; however these have in 2013 been assessed under the main taxon. Noting these aspects, the status shown in Chart 6 does not consider the three bat species mentioned above (for 2013), and consider *Podarcis filfolensis* as one (rather than 4; for 2007 and 2013). Hence, it represents the status of 34 terrestrial species in the years 2007 and 2013.

When considering the data and charts provided above, one can note that there is an improvement when considering the number of these species considered to be at a favourable conservation status, with a decrease in the number being at an unfavourable-bad status. It is relevant for one to ask whether these were actually genuine changes. In view of this, an audit trail was considered so as to distinguish genuine and non-genuine changes in the conservation status assigned. Indeed, when considering terrestrial species, there were two genuine changes; these were for *Brachytrupes megacephalus* and *Pseudoseriscius cameroni*, which now have an improved status. Further details regarding the audit trail considered are provided in Table 14 below. Specific codes indicate the nature of the change in the overall conservation status between the two reporting periods. Such codes are also considered when the overall conservation status is the same, but the trend changed (change in qualifier). In certain cases, the nature of the change is due to more than one reason; in such cases, the reason which contributed the most to the change (the most relevant or important) was indicated. No indication of trail is required when the conservation status and trend have clearly remained the same between the reporting periods.

Table 14 - Trend in Overall Conservation Status of Terrestrial Species of EU Community Importance found in Malta between the two reporting periods (2007: 2001-2006 and 2013: 2007-2012)

Terrestrial Species (arranged alphabetically)	**Overall Conservation Status** FV Favourable U1 Unfavourable - Inadequate U2 Unfavourable - Bad XX Unknown OCC Occasional **Qualifiers** (based on trends over the reporting period that are expected to continue into the future) = stable trend + improving trend - declining/deteriorating trend x unknown trend		**Nature of Change**[43] a = genuine change due to natural or non-natural reasons b1 = observed change is due to more accurate data or improved knowledge b2 = observed change is due to a taxonomic review c1 = observed change is due to use of different methods to measure or evaluate individual parameters or the overall conservation status c2 = observed change is due to the use of different thresholds d = no information about the nature of change e = observed change is due to less accurate data or due to absence of data nc = no change
	Status in 2007	**Status in 2013**	
Anacamptis urvilleana	U1	U1=	nc
Aphanius fasciatus	U1	U1=	b1
Armadillidium ghardalamensis	U1	FV	b1
Asplenium hemionitis	U2	U1x	b1
Brachytrupes megacephalus	U2	U1+	a
Chalcides ocellatus	FV	FV	-
Coluber viridiflavus	FV	FV	-
Cremnophyton lanfrancoi	U1	U1=	b1
Crepis pusilla	U2-	U2=	nc
Crocidura sicula	XX	FV	nc
Discoglossus pictus	U1-	U1=	nc
Elaphe situla	FV	FV	-
Elatine gussonei	U1	FV	c2
Erinaceus algirus	FV	FV	-
Helichrysum melitense	U1	U1=	b1
Hyoseris frutescens	U1	FV	c2
Hypsugo savii	-	XX	-
Lampedusa imitatrix	U1	U1=	nc
Lampedusa melitensis	U2	U2=	nc
Linaria pseudolaxiflora	U2-	U1=	b1
Myotis punicus	U1	U1=	nc
Myrmecophilus baronii	XX	U2x	b1
Nyctalus noctula	OCC	FV	b1
Ophrys melitensis	U1	U1=	nc
Orobanche densiflora	U1	FV	c2
Palaeocyanus crassifolius	U1	U1=	b1
Petalophyllum ralfsii	FV	FV	-
Pipistrellus kuhlii	FV	FV	-
Pipistrellus pipistrellus	-	FV	-
Pipistrellus pygmaeus	FV	FV	-

[43] Specific codes indicate the nature of the change in the overall conservation status between the two reporting periods. Such codes are also considered when the overall conservation status is the same, but the trend changed (change in qualifier). In certain cases, the nature of the change is due to more than one reason; in such cases, the reason which contributed the most to the change (the most relevant or important) was indicated. No indication of trail is required when the conservation status and trend have clearly remained the same.

Plecotus austriacus	U1	U1=	nc
Podarcis filfolensis	FV	FV	-
Pseudoseriscius cameroni	U2	U1+	a
Rhinolophus hipposideros	U1	U1=	nc
Riella helicophylla	U2	U2=	b1
Tadarida teniotis	U1	U1=	nc
Telescopus fallax	FV	FV	-

The list of marine species of Community importance found in Malta comprises 20 species, out of which 5 are deemed occasional to Malta. The status shown in Chart 5 hence represents that of 15 species in the years 2007 and 2013. There is a greater improvement in overall conservation status detected for marine species with the status for 8 species now being known (5 favourable, 3 inadequate) as opposed to all 16 marine species having an unknown status in 2007. Information on the nature of change in status is provided in Table 15 below.

Table 15 - Trend in Overall Conservation Status of Marine Species of EU Community Importance found in Malta between the two reporting periods (2007: 2001-2006 and 2013: 2007-2012)

Marine Species (arranged by alphabetically)	**Overall Conservation Status** FV Favourable U1 Unfavourable - Inadequate U2 Unfavourable - Bad XX Unknown OCC Occasional **Qualifiers** (based on trends over the reporting period that are expected to continue into the future) = stable trend + improving trend - declining/deteriorating trend x unknown trend		**Nature of Change** a = genuine change is due to natural or non-natural reasons b1 = observed change is due to more accurate data or improved knowledge b2 = observed change is due to a taxonomic review c1 = observed change is due to use of different methods to measure or evaluate individual parameters or the overall conservation status c2 = observed change is due to the use of different thresholds d = no information about the nature of change e = observed change is due to less accurate data or due to absence of data nc = no change
	Status in 2007	**Status in 2013**	
Alosa fallax	XX	OCC	-
Balaenoptera physalus	XX	XX	-
Caretta caretta	XX	FV	nc
Centrostephanus longispinus	XX	FV	nc
Corallium rubrum	XX	XX	-
Delphinus delphis	XX	XX	-
Gibbula nivosa	XX	U1x	b1
Globicephala melas	XX	XX	-
Grampus griseus	XX	OCC	-
Lithophaga lithophaga	XX	FV	nc
Lithothamnium coralloides	XX	FV	nc
Phymatholithon calcareum	XX	FV	nc
Physeter catodon	XX	XX	-
Pinna nobilis	XX	U1-	b1
Scyllarides latus	XX	U1x	b1
Stenella coeruleoalba	XX	XX	-
Tursiops truncatus	XX	XX	-
Ziphius cavirostris	XX	XX	-

Comparison of changes between the two reporting periods is done using the approach explained below and using Tables 16 and 17 and results being represented in Table 18.

Table 16 - Matrix to classify changes between two reporting periods

Change in conservation status		CS in 2007-2012 (period p+1)							
		FV	U1+	U1=	U1-	U2+	U2=	U2-	XX
CS in 2001 - 2006 (period p)	FV	S	D	D	D	D	D	D	U
	U1	I	I	S	D	D	D	D	U
	U2	I	I	I	I	I	S	D	U
	XX	S	I	S	D	I	S	D	S

Legend: S = Same; I = Improvement; D = Deterioration; U = Unknown

The change in Table 16 above is built on the following assumptions for 'Unknown' assessments:

- XX assessments in period 'p' that are FV in period 'p+1'assumed to be FV also in period 'p';
- XX assessments in period 'p' that are 'U1+' or 'U2+' in period 'p+1' considered as an 'improvement';
- XX assessments in period 'p' that are 'U1-' or 'U2-' in period 'p+1' considered as a 'deterioration';
- Conservation status assumed to be the 'same' for XX assessments in period 'p' that became 'U1=' or 'U2=' in period 'p+1';

where 'p' = 2001-2006 'p+1' = 2007-2012.

Table 17 - Matrix for measuring progress under Target 1

Change in conservation status between reporting periods		CS in 2007-2012							
		FV	U1 +	U1	U1 -	U2 +	U2	U2 -	XX
CS in 2001 - 2006	FV	A (=)	C (-)	C (-)	C (-)	C (-)	C (-)	C (-)	E (x)
	U1	A (+)	B (+)	D (=)	C (-)	C (-)	C (-)	C (-)	E (x)
	U2	A (+)	B (+)	B (+)	B (+)	B (+)	D (=)	C (-)	E (x)
	XX	A (=)	B (+)	D (=)	C (-)	B (+)	D (=)	C (-)	D (=)

Legend: The signs between brackets indicate the type of change in the conservation status between periods 'p' and 'p+1': (=) no change, (+) improvement, (-) deterioration, (x) not known. 'A' indicates 'favourable' assessments, 'B' 'improved' assessments, 'C' 'deteriorated' assessments, 'D' unfavourable and unknown assessments that did not change, and 'E' assessments that became 'unknown'.

Table 18 - Results for Species of Community Importance in Malta

Change in conservation status between reporting periods		CS in 2007-2012							
		FV	U1 +	U1	U1 -	U2 +	U2	U2 -	XX
CS in 2001 - 2006	FV	9	0	0	0	0	0	0	0
	U1	4	0	12	0	0	0	0	0
	U2	0	2	2	0	0	3	0	0
	XX	6	0	2	1	0	1	0	7

For the Habitats Directive component of Target 1, measuring progress between reporting period 'p' (baseline: 2001-2006) and reporting period 'p+1' (2007-2012) includes the following two components:

- Percentage of features with a Favourable conservation status (FV) in (p+1) (**sub-value A**) = 39 % (19 out of 49 excluding occasional species and new species to the assessment)
- Percentage of Unfavourable and Unknown assessments in (p) that show an improving trend (+) in (p+1) (**sub-value B**) = 8% (4 out of 49 excluding occasional species and new species to the assessment)

A + B gives us the number/percentage of assessments with a favourable or improved conservation status in period p+1 when compared to period p = 47%. These are the 'raw' results, not corrected to take into account only genuine changes. When considering the trails of nature of change overall, 21 out of the 49 species have a favourable (19) or genuinely improved (2) conservation status (i.e. 43%). This data is based on those 49 species which were reported both in 2007 and in 2013. Values would change slightly if all species would be considered – 55 for 2007, 52 for 2013 (excluding occasional species). 23 out of the 52 species reported on in 2013 (excludes occasional species) have a favourable or a genuinely improved conservation status (i.e. 44%).

1.3.2 Population size and range trends for bird species

Malta's 2013 report in compliance with the requirements of Article 12 of the Bird Directive adopts the new reporting system which includes a general report and species datasheets reporting on the size and trends of individual bird species' population and distributions. Apart from breeding birds, this report also incorporated analyses on species which had been locally extinct since the 1980s (the latter being a policy-relevant reference date, since the Birds Directive entered into force in 1981) and regularly occurring wintering waterbirds. Although the Report incorporates assessments of species with small breeding populations, occasional species (non-regular breeders) are not included in the assessment. The results of the latest Article 12 report for Malta are laid down in Tables 19 and 20 for population trends, and range trends, respectively.

Table 19 - Population trends of Maltese breeding and wintering birds during the short (2001-2012) and the long (1980s-2012) term interims

Species of Birds (arranged alphabetically) B: Breeding W: Wintering Ex: Extinct	**Short-Term Trend (2001-2012)**	**Long-Term Trend (1980s-2012)**
	Legend for Trends: 0 = Stable; F = Fluctuating; + = Increasing; - = Decreasing; X = Unknown	
Acrocephalus scripaceus (B)	0	+
Anas platyrhynchos (W)	X	X
Apus apus (B)	+	+
Apus pallidus (B)	+	+
Calandrella brachydactyla (B)	+	F
Calonectris diomedea (B)	-	-
Cettia cetti (B)	+	+
Charadrius dubius (B)	+	+
Cisticola juncidis (B)	+	+
Columba livia (B)	X	X
Fulica atra (W)	X	+
Gallinula chloropus (B)	+	+
Hirundo rustica (B)	+	+
Hydrobates pelagicus (B)	0	-
Larus michahellis (B)	+	+
Miliaria calandra /Emberiza calandra (B)	-	-
Monticola solitarius (B)	+	+
Muscicapa striata (B)	+	+
Passer hispaniolensis (B)	+	+

Passer montanus (B)	-	+
Puffinus yelkouan (B)	+	0
Streptopelia decaocto (B)	+	+
Sylvia conspicillata (B)	+	F
Sylvia melanocephala (B)	+	+
Tachybaptus ruficollis (B)	+	+
Tachybaptus ruficollis (W)	X	+
Tyto alba (Ex)	0	-

According to this report and looking at Chart 7a during the short-term interim around 63% (17 species/populations) of the concerned avifauna (breeding and wintering birds) experienced a population increase, 11.1% (3 species) underwent a population decrease, 11.1% (3 species) had remained stable, whilst the trend of the remaining 14.8% (4 species/populations) was unknown. On the other hand during the long-term interim (*vide* Chart 7b) 66.7% (18 species/populations) of the concerned avifauna (breeding and wintering birds) had experienced a population increase, 14.8% (4 species/populations) underwent a population decrease, 3.7% had remained stable (1 species/populations). More detailed information is provided in table 19 above[44]. It transpires that the majority of the birds analysed had undergone a population increase both during the short and long-term interim. A number of increases were due to the recent colonization of new species such as *Gallinula chloropus* and *Muscicapa striata,* which first started breeding on the Islands in 1984 and 1976 respectively.

Chart 7 - Population Trends during the short- and long- term interims

Chart 7 (a) - Population trends during the Short-term Interim

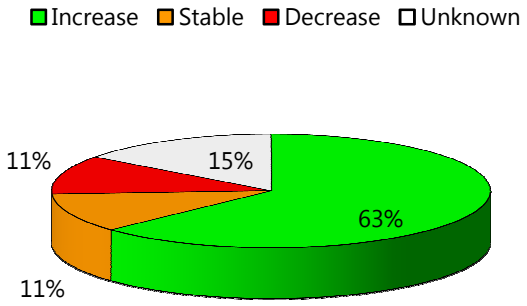


Chart 7 (b) - Population trends during the Long-Term Interim

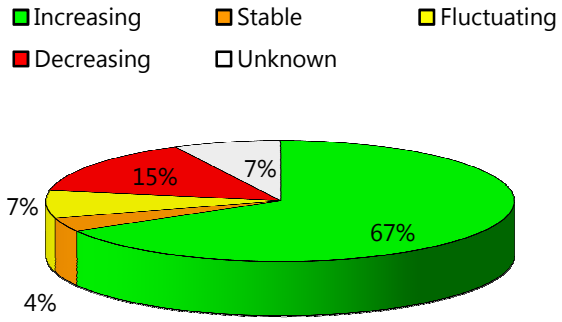


Table 20 - Range trends of the Maltese breeding birds during the short (2001-2012) and the long (1980s-2012) term interims		
Birds (arranged alphabetically) B: Breeding W: Wintering Ex: Extinct	**Short-Term Trend (2001-2012)**	**Long-Term Trend (1980s-2012)**
	Legend for Trends: 0 = Stable; F = Fluctuating; + = Increasing; - = Decreasing; X = Unknown	
Acrocephalus scripaceus (B)	+	+
Anas platyrhynchos (W)	N/A	N/A
Apus apus (B)	+	+

[44] The Article 12 Report gathered data on the Little Grebe (*Tachybaptus ruficollis*) both as a breeding species and as a wintering species. When computing the population changes the wintering and breeding population of Little Grebe were considered to be two separate populations and the percentages were consequently based on the 27 'species/ populations' as listed in Table 7 above.

Apus pallidus (B)	+	+
Calandrella brachydactyla (B)	0	X
Calonectris diomedea (B)	0	0
Cettia cetti (B)	X	+
Charadrius dubius (B)	0	0
Cisticola juncidis (B)	0	+
Columba livia (B)	X	X
Fulica atra (W)	N/A	N/A
Gallinula chloropus (B)	+	+
Hirundo rustica (B)	+	+
Hydrobates pelagicus (B)	0	0
Larus michahellis (B)	0	0
Miliaria calandra/ Emberiza calandra (B)	-	-
Monticola solitarius (B)	0	X
Muscicapa striata (B)	+	+
Passer hispaniolensis (B)	0	0
Passer montanus (B)	F	X
Puffinus yelkouan (B)	0	0
Streptopelia decaocto (B)	+	+
Sylvia conspicillata (B)	X	-
Sylvia melanocephala (B)	0	+
Tachybaptus ruficollis (B)	0	0
Tachybaptus ruficollis (W)	N/A	N/A
Tyto alba (B)	0	-

The natural range describes roughly the spatial limits within which the species occurs and is considered as an envelope surrounding the occupied areas. During the short-term interim 50% of the species had retained a stable trend and the Corn Bunting (*Miliaria calandra)* was the only species to experience a decrease in range. The long-term interim also yielded positive results since the majority of species had either undergone a range expansion or held a stable range. Moreover, the species which held a stable range during the long-term interim also held this trend during the shorter interim.

According to the Article 12 Report and looking at Chart 8a, during the short-term interim around 29.2% (7 species) of the concerned species experienced a population increase, 4.2% (1 species) underwent a population decrease, whilst 50% (12 species) had remained stable. On the other hand (*vide* Chart 8b) during the long interim around 41.7% (10 species) of the species experienced a population increase, 12.5% (3 species) underwent a decline, whilst 29.2% (7 species) had remained stable.

Chart 8 - Range Trends during the short- and long-term interims

Chart 8 (a) - Range Trends during the Short-term Interim

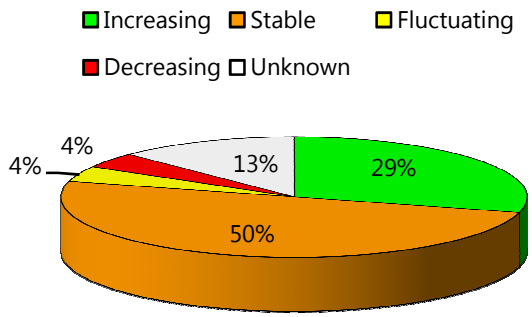
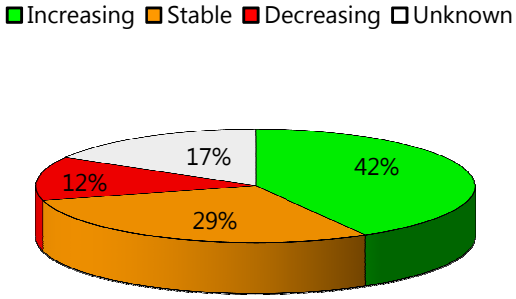
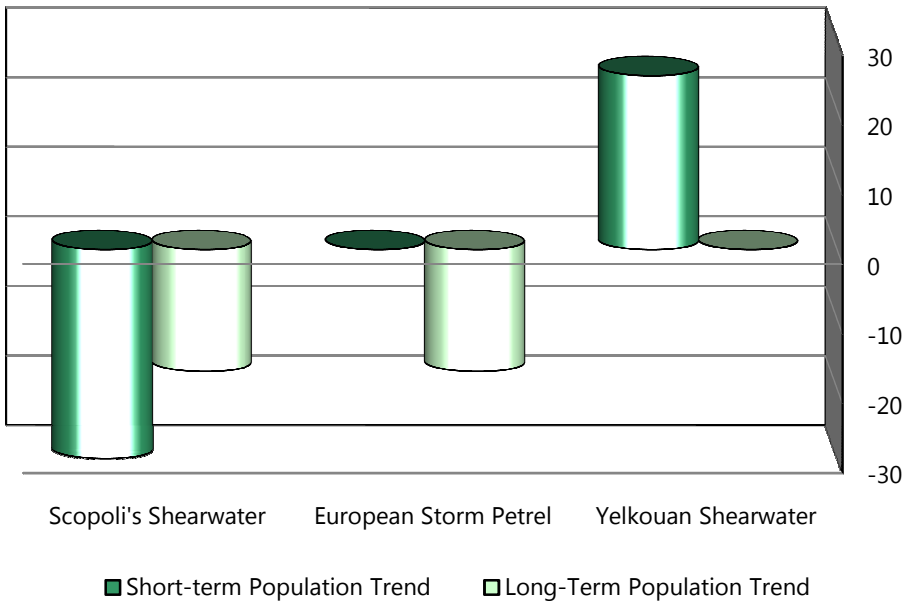


Chart 8 (b) - Range Trends in the Long-term Interim



The Article 12 report also indicates those species considered to be SPA triggers, that is those species listed in Annex I of the Birds Directive for which Special Protection Areas (SPAs) have been classified. For these species additional information about threats/ pressures and SPA coverage and conservation measures are required. For Malta, the SPA Triggers are the *Calonectris diomedea*, *Hydrobates pelagicus* and *Puffinus yelkouan*. The breeding range of these species, which is mainly located within areas designated as SPAs, has remained stable during the assessed interim. In addition, according to the Article 12 assessment, the population trends of the European Storm-Petrel and the Yelkouan Storm Petrel was healthier during the short-term than in the long-term interim (Chart 9).

Chart 9 - Population Trends for the SPA Trigger Species



1.3.3 Conservation status of fungi and lichens in Malta

While the macrofungal mycoflora of the Maltese Islands may amount to some 400 taxa, 18 species of macrofungi are listed in the Red Data Book for the Maltese Islands (Lanfranco, 1989). A list of such species is provided below, with the scientific names updated on the basis of Lanfranco (2001).These species are: *Daldinia concentrica, Helvella crispa, Sarcosphaeria eximia, Agrocybe aegerita, Amanita ovoidea, Amanita verna, Boletus luridus, Boletus pulverulentum, Hygrocybe ovina, Lactarius vinosus,*

Montagnites arenaria, Phellinus robustus f. *punicae, Phellinus robustus* f. *amygdali, Pleurotus nebrodensis* f. *minor, Polyporus brumalis, Russula lepida, Tricholomopsis platyphylla, Colus hirudinosus* f. *minor* and *Tulostoma volvulatum*. In addition, a list of 131 microfungal taxa is included in the same Red List. Such taxa need reassessment. There are still gaps in knowledge in the mycoflora of the Maltese Islands and indeed a sizeable proportion remains unidentified or partially identified and, hence, still unpublished. As noted by Lanfranco (2013) in the 2013 country report to the ECFF, major recent contributions on the subject are Briffa & Lanfranco (1986), Lanfranco (1989), Briffa (2001, 2002) and Sammut & Melzer (2012). Species with a restricted distribution in Europe include *Sarcosphaeria coronaria, Boletopsis grisea, Montagnea candollei, Battaraea phalloides* (Falzon, 2004) and *Psathyrella bivelata*. Other species of restricted European distribution are *Coriolopsis aspera* (Briffa 2002a) and *Inonotus euphoria*, originally recorded as *Inonotus indicus (= Aurificaria indica*) by Pieri & Rivoire (1996) from material supplied by Briffa. However these two species may possibly have been introduced. Most species recorded are considered to be rare, though in several cases this may be due to under recording.

As far as lichens are concerned, 12 taxa are listed, these being essentially taxa which have been described from the Maltese Islands and which are presumably endemic (Sommier & Caruana Gatto, 1915). These species are: *Biatora fusco-nigrescens, Caloplaca marmorata* var.*cephaloidea, Caloplaca melitensis, Caloplaca pyracea* var. *lactea* forma *macrocarpa, Collema meliteum var. conglomeratum, Graphina sophistica* var. *melitense, Lecaniella alocyza* var.*flavidula, Lecanora sublentigera, Lecidea pertusariicola, Scolicosporium doriae* var. *decussatum, Thalloedema mammillare* var. *pulchella* and *Thalloedema paradoxum*. An updated checklist of lichens in the Maltese Islands is currently being developed by Jennifer Fiorentino, who is a Senior Lecturer in Biology at the University Junior College.

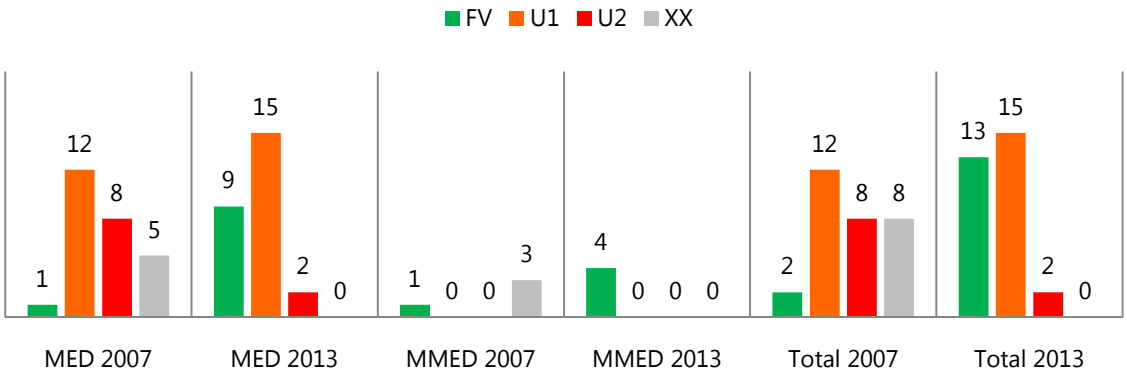
Sarcosphaera coronaria and *Boleptopsis griseus* are legally protected and are covered by the "Flora, Fauna and Natural Habitats Protection Regulations, 2006" (Legal Notice 311 of 2006, as amended). Two other species: one fungus and one lichen, *Pleurotus eryngii* and *Rocella phycopsis* respectively are included in Schedule VIII of the afore-cited Regulations; this Schedule lists species whose taking may be subject to management measures. All endemic and possibly endemic species of fungi are legally protected through Regulation 26 of Legal Notice 311 of 2006, as amended. This is of relevance particularly with respect to the many 'possibly endemic' microfungi (which however deserve further taxonomic assessment). Lichens are locally equally unexploited, with only two species having been exploited. These are namely *Ramalina durieui* and *Roccella phycopsis*, which were traditionally used in decorating cribs; their utilisation for such activities has nowadays mostly fallen in disuse.

In Malta, the main concern with fungi and lichens conservation lies with the loss of habitat and/or its modification, rather than their exploitation. Habitat conservation is hence deemed to be a more effective toward fungi and lichen conservation and protection. Most of the macrofungi (and myxomycetes) reported from the Maltese Islands are essentially confined to protected areas, including most of the species listed in the official Red Data Book for the Maltese Islands. Indeed, some of these sites have also gained their protected status partly due to the fungi, which occur in the area. Fungi are mostly known from holm oak forest remnants, such as those at Il-Ballut (l/o Il-Wardija), Il-Ballut (l/o L-Imġiebaħ), Ta' Baldu/Wied Ħażrun and Il-Bosk, and from pine woodland, maquis and riparian woodland assemblages of the area of Il-Buskett and il-Girgenti, especially at Il-Buskett, Għajn il-Kbira, Ta' Rapa, Il-Verdala and Wied il-Luq. Another important area is the carob-lentisk maquis at Wied Għollieqa (l/o San Ġwann), as well as the various valley, pre-desert scrub and phrygana communities known from Wied Babu (l/o Iż-Żurrieq). Fungi are also known from garrigue communities, such as those at Ix-Xagħra tal-Borgħom (L-Imtaħleb, l/o Ir-Rabat).

1.3.4 Conservation status of habitats

Malta also carried out its second assessment of the conservation status of habitats of European Community Importance that are found in the Maltese territory in compliance with reporting obligations of the EC Habitats Directive. The results of the first assessment (2007) and second assessment (2013) are compared in Chart 10 and detailed in Table 21, considering those habitats which were considered in both reporting periods. In the case of habitats, there was only one habitat type which was reported on in 2007 but which has been removed from Malta's list in 2013 following clearer issues of interpretation.

Chart 10 - Comparison between the assessment of overall conservation status of habitats of Community Interest in Malta that are reported both in 2007 and 2013



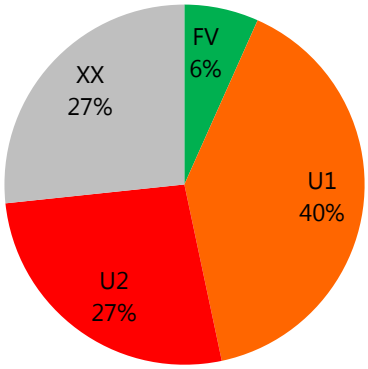


Chart 10 (a) Overall Conservation Status in 2007 for all habitats

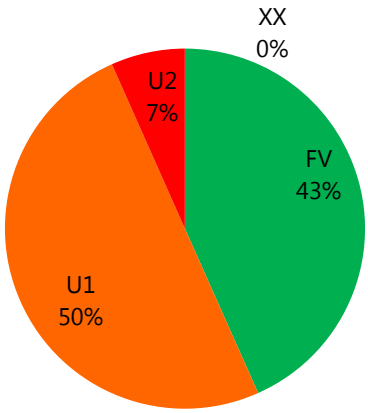


Chart 10 (b) Overall Conservation Status in 2013 for all habitats

The percentages shown in Chart 10(a) would change in the case of considering all habitat types without excluding the habitat considering only in 2007 as follows: In 2007: 6% FV; 39% U1; 26% U2 and 29% XX.

The list of habitats of Community importance found in Malta comprises 26 terrestrial habitats and 4 marine habitats. The status shown in Chart 10 represents that of all 30 habitat types in the years 2007 and 2013. When considering terrestrial habitats, there is an improvement in conservation status with 9 habitats having a favourable conservation status as opposed to 1 habitat in the previous assessment, and 17 habitats having a bad or inadequate status as opposed to the 20 habitats in the previous

assessment. There is a notable improvement in overall conservation status detected for marine habitats. All marine habitats are now being assigned a favourable conservation status as opposed to only one having such a status and the rest having an unknown status in 2007. However, it should be kept in mind that such changes are generally not an actual genuine change, but mostly due to more accurate data and improved data interpretation, or due to the use of different thresholds. A worsening trend in conservation status is reported for Southern riparian galleries and thickets (Nerio-Tamaricetea and *Securinegion tinctoriae*).

In this respect, trails for nature of change were determined and details are provided in Table 21 below. As for the species, specific codes indicate the nature of the change in the overall conservation status between the two reporting periods. Such codes are also considered when the overall conservation status is the same, but the trend changed (change in qualifier). In certain cases, the nature of the change is due to more than one reason; in such cases, the reason which contributed the most to the change (the most relevant or important) was indicated. No indication of trail is required when the conservation status and trend have clearly remained the same between the reporting periods.

Table 21 - Trend in Overall Conservation Status of Habitats of EU Community Importance found in Malta between the two reporting periods (2007: 2001-2006 and 2013: 2007-2012)

Habitats (arranged by code)	**Overall Conservation Status** FV Favourable U1 Unfavourable - Inadequate U2 Unfavourable - Bad XX Unknown **Qualifiers** (based on trends over the reporting period that are expected to continue into the future) = stable trend + improving trend - declining/deteriorating trend x unknown trend		**Nature of Change** a = genuine change is due to natural or non-natural reasons b1 = observed change is due to more accurate data or improved knowledge b2 = observed change is due to a taxonomic review c1 = observed change is due to use of different methods to measure or evaluate individual parameters or the overall conservation status c2 = observed change is due to the use of different thresholds d = no information about the nature of change e = observed change is due to less accurate data or due to absence of data nc = no change
	Status in 2007	**Status in 2013**	
1110 Sandbanks which are slightly covered by sea water all the time	XX	FV	nc
1120 *Posidonia* beds (*Posidonion oceanicae*)	FV	FV	-
1150 Coastal lagoons	U1-	U1=	c2
1170 Reefs	XX	FV	b1
1210 Annual vegetation of drift lines	U2	U1=	c2
1240 Vegetated sea cliffs of the Mediterranean coasts with endemic *Limonium* spp.	U1	FV	c2
1310 *Salicornia* and other annuals colonizing mud and sand	U2	U1=	c2
1410 Mediterranean salt meadows (*Juncetalia maritimi*)	U2	U1=	c2
1420 Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)	U1	FV	c2
1510 Mediterranean salt steppes (*Limonietalia*)	FV	FV	-
2110 Embryonic shifting dunes	U2	U1=	c2

2210 *Crucianellion maritimae* fixed beach dunes	U2	U1=	c2
2220 Dunes with *Euphorbia terracina*	U2	U2=	c2
3140 Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.	XX	U1x	nc
3170 Mediterranean temporary ponds	U1	U1=	c2
5230 Arborescent matorral with *Laurus nobilis*	U1	U1=	nc
5330 Thermo-Mediterranean and pre-desert scrub	XX	FV	nc
5410 West Mediterranean clifftop phryganas (*Astragalo-Plantaginetum subulatae*)	U1	U1=	nc
5420 *Sarcopoterium spinosum* phryganas	U1+	U1=	a
5430 Endemic phryganas of the *Euphorbio-Verbascion*	XX	FV	nc
6220 Pseudo-steppe with grasses and annuals of the *Thero-Brachypodietea*	U1	FV	b1
8210 Calcareous rocky slopes with chasmophytic vegetation	U1	FV	c2
8310 Caves not open to the public	XX	FV	nc
8330 Submerged or partially submerged sea caves	XX	FV	nc
92A0 *Salix alba* and *Populus alba* galleries	U2	U2=	nc
92D0 Southern riparian galleries and thickets (Nerio-Tamaricetea)	U1	U1-	nc
9320 *Olea* and *Ceratonia* forests	XX	FV	nc
9340 *Quercus ilex* forests	U2	U1=	c2
9540 Mediterranean pine forests with endemic Mesogean pines	U1	U1=	nc
9570 *Tetraclinis articulata* forests	U1	U1=	b1

Comparison of changes between the two reporting periods is done using the approach explained below on the basis of Tables 16 and 17 and results being represented in Table 22.

Table 22 - Results for Habitats of Community Importance in Malta

Change in conservation status between reporting periods		CS in 2007-2012							
		FV	**U1 +**	**U1**	**U1 -**	**U2 +**	**U2**	**U2 -**	**XX**
CS in 2001 - 2006	**FV**	2	0	0	0	0	0	0	0
	U1	4	0	7	1	0	0	0	0
	U2	0	0	6	0	0	2	0	0
	XX	7	0	1	0	0	0	0	0

For the Habitats Directive component of Target 1, measuring progress between reporting period 'p' (baseline: 2001-2006) and reporting period 'p+1' (2007-2012) includes the following two components:

- Percentage of features with a Favourable conservation status (FV) in (p+1) (**sub-value A**) = 43 % (13 out of 30)
- Percentage of Unfavourable and Unknown assessments in (p) that show an improving trend (+) in (p+1) (**sub-value B**) = 20% (6 out of 30)

A + B gives us the number/percentage of assessments with a favourable or improved conservation status in period p+1 when compared to period p = 63%. These are the 'raw' results, not corrected to take into account only genuine changes. When considering the trails of nature of change overall, 13 out of 30 habitats have a favourable conservation status (i.e. 43%).

1.4 Case studies illustrating how actions taken to implement the Convention have resulted in changes in biodiversity

The following case studies highlight the importance of research (and application of latest technologies) and conservation action to gain a better insight on elements of biodiversity in the country, their status, distribution, threats and how to address these.

1.4.1 Case Study on Hypsugo savii

Research undertaken on bats over a period of 15 days during October 2010 (Dodds, 2010)[45], recorded the presence of a new pipistrelle species for Malta, which through DNA analysis of faecal pellets was confirmed to be *Hypsugo savii*. The primary aim of the research was to attempt to identify fur-dwelling ectoparasites present on bats found in Malta through capture of bats using mist nets. Another aim was to gather as much distribution data on bats as possible, using a variety of passive survey methods. The previously unrecorded *H. savii* was recorded in five locations during the study by Dodds, who explained that previous use of heterodyne bat detectors on the islands could have resulted in the echolocation calls of this species being easily confused with *Pipistrellus kuhlii* since the frequency difference between the two species is likely to lie within the margin of error of most heterodyne bat detectors. In the case of this study on the other hand, recordings made by Anabat (and confirmed using a Peterson D240 time expansion bat detector) allowed accurate measurement of the recorded calls.

1.4.2 Case Study on Puffinus yelkouan

Over the last 25 years, the Yelkouan shearwater (*Puffinus yelkouan*), a species of strategic importance at the European level, has been in decline in Malta. Pressures and threats faced by this species include premature mortality, loss of breeding habitats and human disturbance at nesting sites. The LIFE Garnija-Maltija Project (LIFE06 NAT/MT/000097), which commenced on 1 September 2006 and concluded on 30 June 2010 had the primary objective of reversing this declining trend and increase the species' population at Rdum tal-Madonna, a designated SPA, which hosts the largest colony (500 of the 1,500 breeding pairs) in Malta. Significant results that have benefited the sustainability of the *P. yelkouan* population include a 10% improvement in the population size of the target species. Adult survival rates reached 96% and breeding success increased from 21% to 90%. Other key project actions resulted in the reduction of human disturbance on the site, a successful working partnership between NGOs and the government, as well as increased awareness levels among members of the general public. The Management Plan and the After-Life Conservation Plan are important tools to

[45] Dodds, D. (2010): Report to the Malta Environment & Planning Authority for Nature Permit (NP177/10) issued to identify ectoparasite species present on bats found in Malta, 2010.

assist the species' sustainability. More information is available on the project's website[46]. The project report is also available[47].

1.5 Main direct and indirect drivers of change

The main direct drivers of change to biodiversity in general remain as reported in Malta's 4NR i.e. land conversion/degradation, pollution and invasive alien species. Indirect drivers of change in Malta include constraints in resources hindering effective or timely conservation action, misconceptions towards elements of biodiversity and lack of biodiversity valuation in decision and policy making.

1.5.1 Main pressures and threats on species and habitats of Community importance

Part of the conservation status assessments undertaken as a requirement of the EC Habitats Directive relates to the pressures and threats being faced by those habitats and species listed in the Directive and found in Malta. Impacts are categorised in two groups: (a) pressures, i.e. factors acting now or that have been acting in the past few years; and (b) threats, i.e. factors expected to be acting in the future. Noting this, it is possible for the same impact to be both a pressure and a threat if it is having an impact now and the impact in question is likely to continue in the coming years. This pressure and threat assessment was carried out by Malta in 2007[48] and in 2013[49], with some slight adjustments on the method between one reporting period and the other as required by the Habitats Directive Article 17 Reporting guidelines[50]. A standard extensive list of pressures/threats[51] is to be followed, with these being assigned to the main categories given in Table 23. For the 2013 reporting, Member States were to also indicate the level of the pressure/threat, indicating whether it is of high, medium or low importance/impact. The explanation of these, as per the same guidelines, is given in Table 24. The intention of the reports prepared for each habitat and species was not to include every existing pressure or threat; the list was to include a maximum of five high importance pressures, and up to a maximum of twenty pressures in all (same goes for threats).

Table 23 - Main Categories for Pressures and Threats

Code	Description
A	Agriculture
B	Sylviculture, forestry
C	Mining, extraction of materials and energy production
D	Transportation and service corridors
E	Urbanisation, residential and commercial development
F	Biological resource use other than agriculture & forestry
G	Human intrusions and disturbances
H	Pollution
I	Invasive, other problematic species and genes
J	Natural system modifications
K	Natural biotic and abiotic processes (without catastrophes)
L	Geological events, natural catastrophes
M	Climate change
X	No threats or pressures

[46] www.lifeshearwaterproject.org.mt/en/index.aspx
[47] http://www.lifeshearwaterproject.org.mt/uploads/items/154.pdf
[48] Complete report available at: http://cdr.eionet.europa.eu/mt/eu/art17/envrflrpw
[49] Complete report available at: http://cdr.eionet.europa.eu/mt/eu/art17/envue53pa
[50] https://circabc.europa.eu/w/browse/0de47902-0a08-41dd-943c-520066a3c529
[51] Complete list of pressures/threats including codes and description available at: http://bd.eionet.europa.eu/activities/Natura_2000/Folder_Reference_Portal/Ref_threats_pressures_FINAL_20110330.xls (accessed on 10 March 2014).

XO	Threats and pressures from outside the Member State
XE	Threats and pressures from outside the EU territory
U	Unknown threat or pressure

Table 24 - Relative Importance of Pressures and Threats

Code	Meaning	Comment
H	High importance/impact	Important direct or immediate influence and/or acting over large areas
M	Medium importance/impact	Medium direct or immediate influence, mainly direct influence and/or acting over moderate part of the area/acting only regionally
L	Low importance/impact	Low direct or immediate influence, indirect influence and/or acting over small part of the area/acting only regionally

For Malta, the assessment considered 30 habitats (26 terrestrial and 4 marine) and 52 species (13 terrestrial flora, 2 marine flora, 24 terrestrial fauna and 13 marine fauna). . If one were to consider the number of habitat assessments reported as being affected by one or more high importance/impact pressure, the pressure categories featuring most often as affecting habitats in Malta appear to be those related to the categories: human intrusions and disturbances, invasive and other problematic species and genes, geological events, and natural catastrophes. When considering threats, these are on the same lines of the aforementioned pressures; accept that geological events and natural catastrophes feature as the most predominant threat category. The situation is slightly different when considering species, with the main pressure categories which feature being natural biotic and abiotic processes, followed by invasive and other problematic species and genes, and natural system modifications. In the case of threats, the categories in question are the same as those for pressures; however instead of natural system modifications, human intrusions and disturbances predominate. This is depicted in the Charts 11 and 12 below, when considering those pressures/threats of high importance/impact.

Chart 11 - Number of habitat assessments reported as being affected by one or more 'high' importance pressure/threat categories - 2013

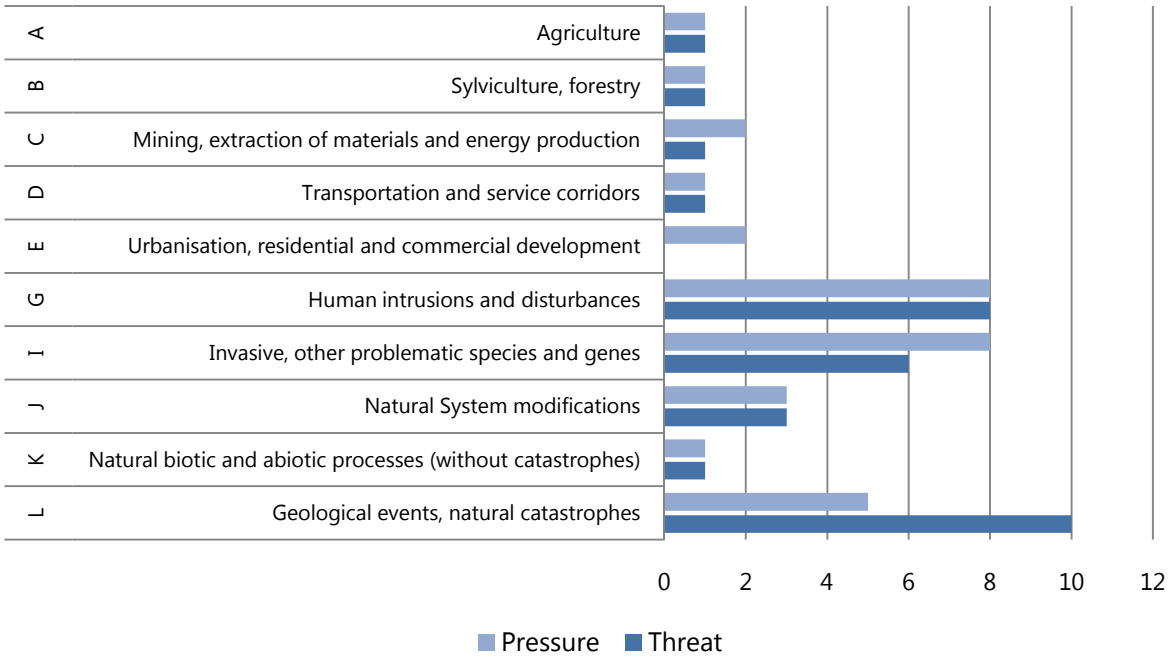
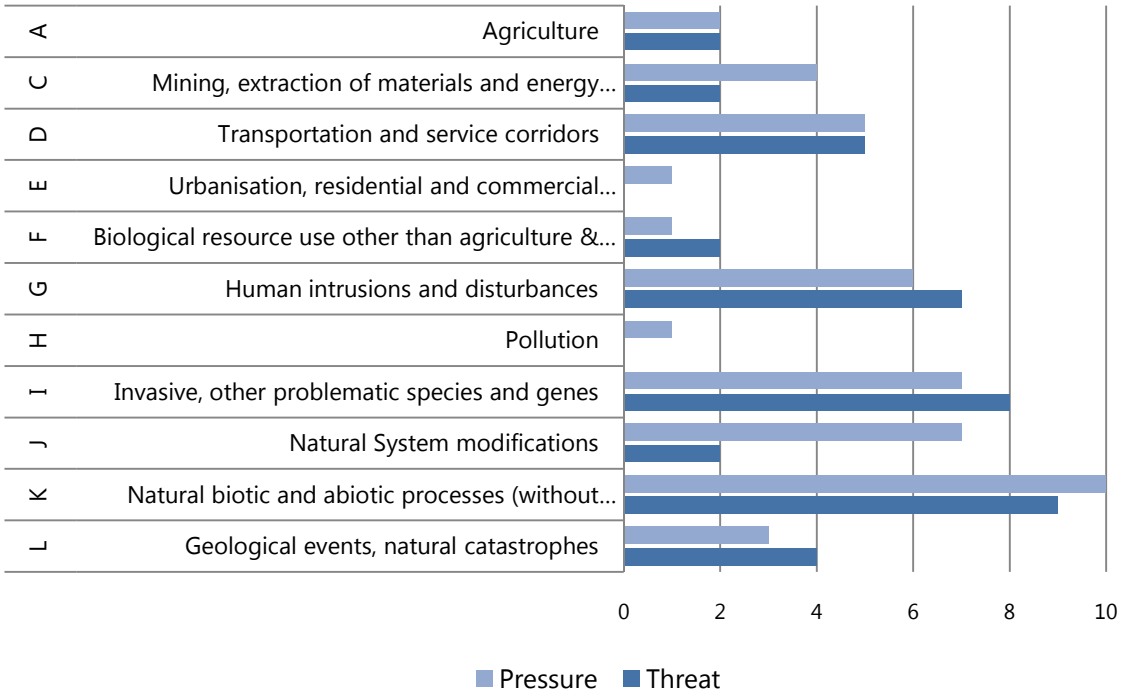


Chart 12 - Number of species assessments reported as being affected by one or more 'high' importance pressure/threat categories - 2013



Considering all reported pressures and threats for all the habitats and species reported on as required for the mentioned Article 17 report, amongst the main pressures and threats there are: natural biotic/abiotic processes, invasive/other problematic species and genes, natural system modifications, human intrusions and disturbances, and natural system modifications; with geological events and natural catastrophes featuring amongst the main threats. It is hence clear that pressures and threats remain more or less similar to those reported previously, these being in relation to impacts leading to habitat fragmentation, degradation and destruction, and in relation to the exploitation of wildlife.

Referring to Figure 7, it can be clearly observed that the pressures and threats reported in the 2007 Article 17 report were also related to the impacts mentioned above for the 2013 report.

Category of pressure / threat	HABITATS		SPECIES	
	Actual pressures	Future threats	Actual pressures	Future threats
Agriculture, Forestry	71	52	36	40
Fishing, hunting and collecting	68	35	67	73
Mining and extraction of materials	23	23	35	33
Urbanisation, industrialisation and similar activities	68	58	60	24
Transportation and communication	65	52	69	69
Leisure and tourism (other than above)	94	77	44	56
Pollution and other human impacts/activities	100	100	82	82
Human induced changes in wetlands and marine environments	29	29	33	35
Natural processes (biotic and abiotic)	90	97	62	89

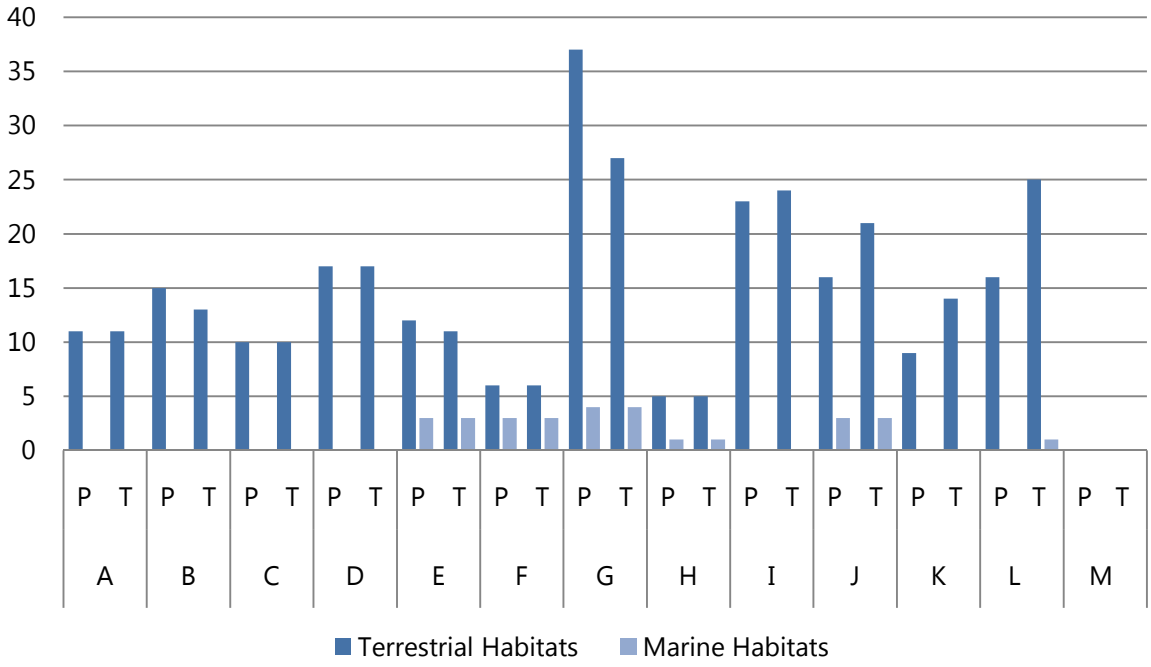
Figure 7 - Frequency (%) of how many times the pressure and threat category was mentioned for habitats/species covered by Malta's 2007 Article 17 report

(Red cells indicate the three highest values)

Noting the main categories mentioned for the 2013 report, Charts 13, 14 and 15 provide a clear depiction of this in relation to habitats, flora and fauna separately, and are hence accompanied by an

overview of the specific pressures/threats in question (i.e. an indication of specific pressures/threats that fall within the main categories is given). In this case, all pressures/threats, whether of high/medium/low importance/impact, were considered.

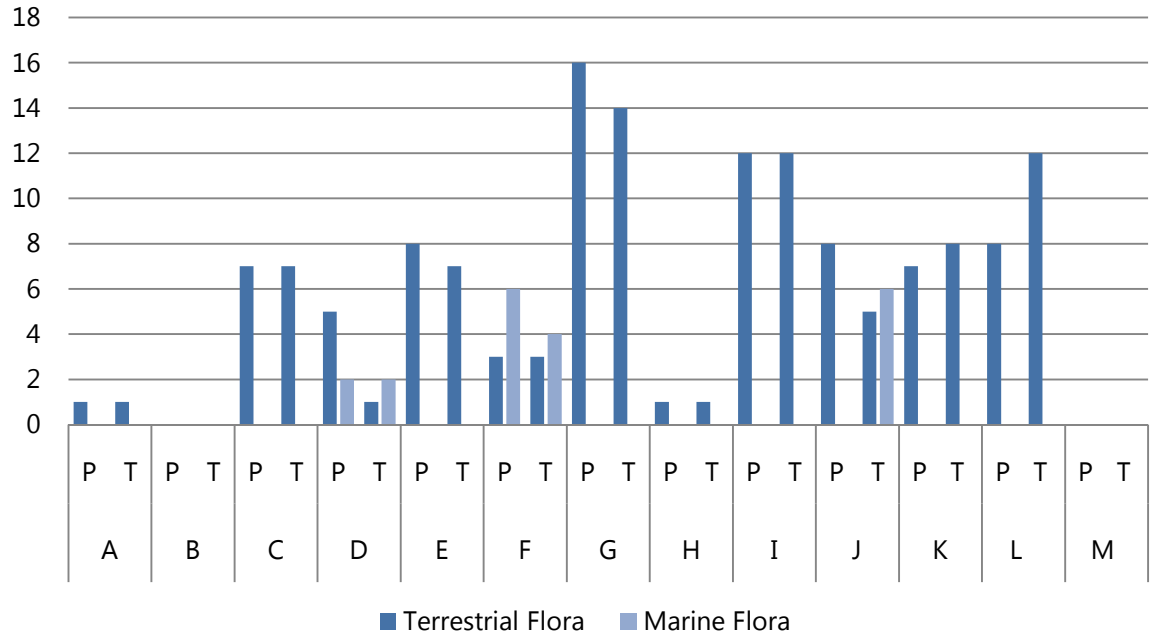
Chart 13 - Pressures and Threats for Terrestrial and Marine Habitats - 2013



Terrestrial Habitats - Camping, leisure, overuse, trampling and improved access to certain sites are amongst pressures the negative effects of which were mostly pronounced on terrestrial habitats. Since a number of important habitats offer the ideal setting for leisure activities, these are prone to be affected by such human activities. Invasive alien species also express their impacts on such habitats. An example is the Kaffir fig, a succulent ornamental plant which has escaped from cultivation as a result of plant pruning, and has since become invasive in cliff communities and sand dunes, where it poses risks on sensitive native species, despite measures being taken by MEPA to eradicate this species from selected important protected areas. Threats to terrestrial habitats more or less reflect the pressures. However, besides these, considering that some of these habitats, like cliff faces, are located in areas exposed to erosion, a major threat is natural catastrophes, as is land collapse.

Marine Habitats - The ever-growing aquatic tourism and recreational SCUBA diving and snorkelling activities constitute one of the most significant pressures having detrimental effects on marine habitats, with impacts being both intentional and unintentional. Physical damage, trapping of air bubbles in submerged caves, re-suspension of sediments and disturbance of species all result in impacts on marine habitats. Mechanical damage caused by anchoring and trawling for the harvesting of aquatic resources is also considered to be a significant pressure. An example of resource harvesting which impacts marine habitats is illegal Date Mussel fishing, which involves the breaking of reef rock to facilitate extraction of specimens. Chemical and physical pressures resulting from dumping at sea and discharges are further pressures. Such pressures are expected to be threats in the coming years, together with storms, which can potentially alter the status of some of these habitats considerably in extreme cases.

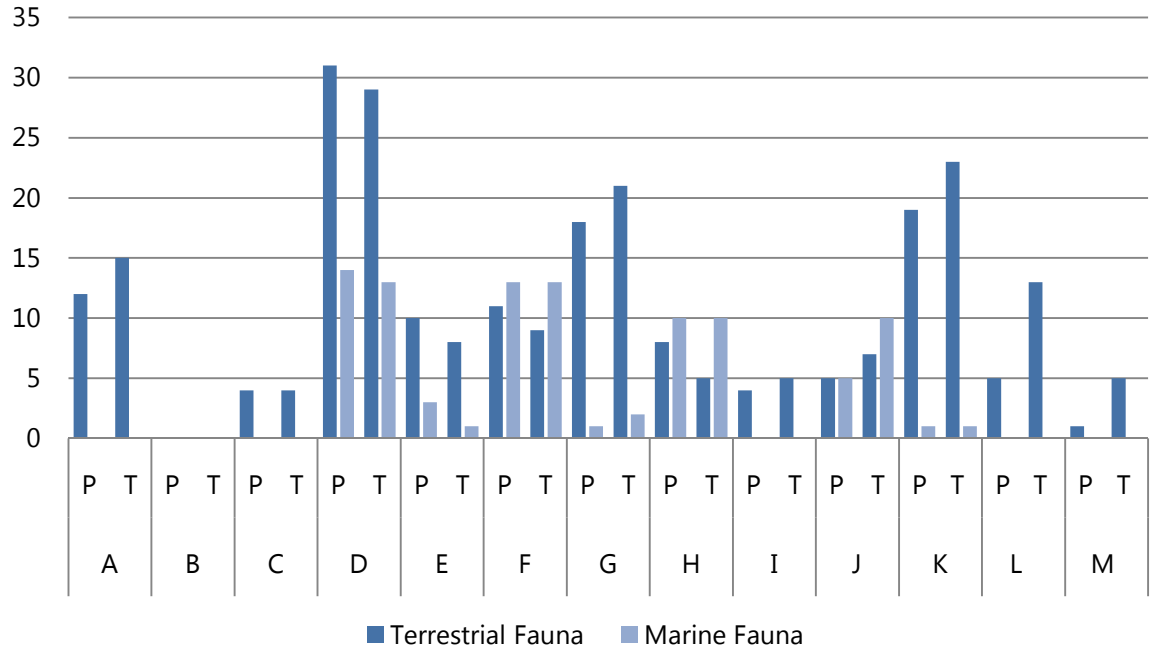
Chart 14 - Pressures and Threats for Terrestrial and Marine Flora - 2013



Terrestrial Flora – These are mostly impacted by pressures related to human disturbance, mainly in the form of trampling, noting that various important terrestrial plant species grow in areas which are of great recreational importance. An example would be the Maltese pyramidal orchid, which unfortunately at times is not just cut, but uprooted, it being an attractive flowering plant found in various areas where nationals and foreigners alike are attracted to for a stroll in Malta's countryside. Invasive species also pose a considerable pressure on terrestrial plant species, especially those requiring specific conditions and growing as singular specimens or in small clusters, such as the Maltese spider orchid, by competing for their limited resources. Other major pressures include development, which reduces habitat availability, together with natural catastrophes, the latter affecting mostly those species inhabiting coastal cliffs, such as the Maltese cliff-orache, since such habitat is subject to events such as collapse of terrain. Threats for terrestrial flora are similar to the mentioned pressures, as well as natural biotic and abiotic processes, such as erosion.

Marine Flora – For the purpose of the reporting carried out, this consists of two species, referred to as mäerl. In this regard, pressures are mostly a result of bunkering, with trawling and other fishing activity, and anchoring of large vessels, possibly having some effect. Threats are similar; however those associated with land reclamation precede them in the possible impact.

Chart 15 - Pressures and Threats for Terrestrial and Marine Fauna - 2013



Terrestrial Fauna - Most pressures on such species are a result of access networks, including roads and pathways, and related transportation and communication. For instance, one can mention the effect that vibrations caused by vehicles have on various cave-dwelling species of bats, which group of species are all protected across Europe under different legislative instruments. Natural processes also play a role when considering pressures on terrestrial fauna; these are mostly in view of erosion caused for instance by rain and sea-spray, and antagonism with domestic animals (e.g. cats present a pressure to the Maltese wall lizard, an endemic species and the oscillated skink). Human intrusions and disturbances, including outdoor sports, leisure and recreational activities and trampling are also important pressures affecting terrestrial fauna. The main threats expected to have an impact in coming years are similar to the pressures mentioned.

Marine Fauna - As for terrestrial fauna, most pressures affecting marine species also arise from transportation, that is, marine traffic routes and related activities. Apart from noise pollution affecting various marine mammals, sea turtles are also susceptible to physical damage with propellers. Another major pressure is harvesting of resources, which affects not only targeted species, but also other non-targeted ones, both directly and indirectly through the destruction of suitable habitats or depletion of alimentary resources. Marine water pollution is another factor which affects marine fauna; an evident example can be seen from the distribution of the Date Mussel which is absent from port areas, despite the presence of its suitable habitat, which is soft calcareous rock. The threats on marine fauna are expected to reflect the pressures mentioned, possibly together with other human-induced changes, as are land reclamation, and dumping and depositing of dredged deposits.

Part II

Malta's National Biodiversity Strategy and Action Plan - its implementation and the mainstreaming of biodiversity

On 12 December 2012, Malta adopted its National Biodiversity Strategy and Action Plan (NBSAP) with the theme "Working Hand-in-Hand with Nature" and covering the period 2012 to 2020. It establishes the long-term vision that "*All Maltese citizens will value the importance of Malta's biodiversity and work hand-in-hand with nature in their daily lives. Efforts aimed at sustainable and more resource-efficient choices and actions by local communities and relevant sectors have contributed to a significant improvement in the status of Malta's biodiversity and associated ecosystem services, for the well-being of present and future generations*."

2.1 Malta's Targets developed in line with the Global Strategic Plan for Biodiversity (2011-2020) and its Aichi Biodiversity Targets

Malta has set 19 national biodiversity targets that are aligned with the Aichi Targets while still reflecting the priorities and capacities of the country. The national targets are categorised using the same five strategic goals of the Global Biodiversity Strategic Plan. There are 19 targets and not 20 because one national target (target 14) has been set up for the Aichi targets 10 and 15 that deal with climate change. All targets have the same timeline, that is, 2020. Targets 1, 5, 10 and 13 are quantified and hence measurable.

By **2020**, the following targets will be achieved:

Addressing the underlying causes of biodiversity loss

National Target 1: More than 55% of Maltese citizens are aware of the term "biodiversity", know what it means and also know what steps they can take to conserve and use biodiversity in a sustainable manner. [Linked to Aichi Target 1]

National Target 2: The values of biodiversity and ecosystem services, and the opportunities derived from their conservation and sustainable use, are recognised and integrated in national policies (including national accounting, as appropriate), as well as decision-making and planning processes. [Linked to Aichi Target 2]

National Target 3: Positive incentives for conservation and sustainable use of biodiversity are increasingly promoted. Malta cooperates in efforts to address environmentally harmful subsidies. [Linked to Aichi Target 3]

National Target 4: Main sectors that are beneficiaries of ecosystem services have incorporated biodiversity concerns into their sectoral and cross-sectoral plans, policies and programmes, as appropriate. [Linked to Aichi Target 4]

Reducing the direct pressures of biodiversity

National Target 5: The rate of loss of natural and semi-natural habitats of conservation value is at least halved, and degradation and fragmentation is significantly reduced. The percentage cover of "forests and semi-natural areas" has not decreased below the CORINE land cover data of 2006. [Linked to Aichi Target 5]

National Target 6: Pressure on vulnerable ecosystems through overexploitation of biological resources is reduced by adopting sustainable practices. [Linked to Aichi Target 6]

National Target 7: Areas under agriculture and aquaculture are managed sustainably, ensuring the conservation of biodiversity. [Linked to Aichi Target 7]

National Target 8: The implementation of effective measures to address pollution (including from excess nutrients) in line with the requirements of established legislation, is showing signs of a decreasing trend in current pollution levels, where feasible. [Linked to Aichi Target 8]

National Target 9: Measures are in place to prevent, in so far as practical, the introduction and establishment of new invasive non-native species, while those that are established are identified and prioritised for eradication or control, where feasible. [Linked to Aichi Target 9]

Improving the status of biodiversity

National Target 10: Malta's 13% land area covered by terrestrial Natura 2000 sites is maintained, and Malta's sufficiency in the designation of key marine biodiversity areas is improved through a representative network of marine protected areas. [Linked to Aichi Target 11]

National Target 11: The risk of local extirpation of known threatened species has been reduced, with 30% of the species of European Community Importance in the Maltese territory having a favourable or improved conservation status. [Linked to Aichi Target 12]

National Target 12: The status of crop and livestock genetic diversity in agricultural ecosystems and of wild relatives has been safeguarded and improved, where feasible. [Linked to Aichi Target 13]

Enhancing the benefits from biodiversity

National Target 13: Vulnerable ecosystems that provide essential services are safeguarded, with at least 15% of degraded ecosystems restored, while 20% of the habitats of European Community Importance in the Maltese territory have a favourable or improved conservation status. [Linked to Aichi Target 14]

National Target 14: The impacts of climate change on ecosystems have been reduced, in so far as feasible and, mitigation and adaptation responses to climate change that support and conserve biodiversity have been agreed and are being implemented. [Linked to Aichi Targets 10 and 15]

National Target 15: Access to national genetic resources is regulated through a National Regime on Access and Benefit Sharing (ABS). [Linked to Aichi Target 16]

Enhancing implementation

National Target 16: Malta is implementing an effective and participatory national biodiversity strategy and action plan (NBSAP). [Linked to Aichi Target 17]

National Target 17: The contribution of local communities/entities to the sustainable management of biodiversity is recognised and enhanced. [Linked to Aichi Target 18]

National Target 18: Knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved and applied. [Linked to Aichi Target 19]

National Target 19: Capacity for national implementation of the Convention on Biological Diversity, other related Multilateral Environmental Agreements (MEAs) and EU obligations, has increased from current levels. [Linked to Aichi Target 20]

2.2 Brief description of the NBSAP

Malta has responded to its commitments under the CBD as well as commitments made at the tenth meeting Conference of the Parties (COP10) held in Nagoya in 2010 to adopt its NBSAP in line with the CBD's Global Biodiversity Strategic Plan (2011-2020) and to set in parallel appropriate national targets aligned to the UN global Aichi Targets. Malta's NBSAP is in fact viewed as a key national instrument for implementing the three objectives of the Convention, relevant provisions thereto, as well as the Global Biodiversity Strategic Plan. Malta's NBSAP defines some 80 action-based and outcome-oriented measures categorised according to 18 themes. The links between the targets and thematic areas are as follows:

National Target 1 on Biodiversity Awareness	⇨	NBSAP Theme 10 on Communication, Education & Public Awareness
National Target 2 on Biodiversity Valuation	⇨	NBSAP Theme 8 on Pro-biodiversity Businesses and a Green Economy
National Target 3 on Positive Incentives	⇨	NBSAP Theme 8 on Pro-biodiversity Businesses and a Green Economy NBSAP Theme 9 on Financing Biodiversity
National Target 4 on Biodiversity Mainstreaming	⇨	NBSAP Theme 5 on Sustainable Use of Biological Resources NBSAP Theme 6 on Sustainable Use of Natural Resources NBSAP Theme 18 on Other Sectoral Integration
National Target 5 on Habitat Loss	⇨	NBSAP Theme 2 on Species & Habitats NBSAP Theme 3 on the Ecological Network of Protected Areas NBSAP Theme 12 on Enforcement NBSAP Theme 13 on Environmental Assessment
National Target 6 on Overexploitation	⇨	NBSAP Theme 5 on Sustainable Use of Biological Resources NBSAP Theme 6 on Sustainable Use of Natural Resources NBSAP Theme 12 on Enforcement
National Target 7 on Sustainable Agriculture & Aquaculture	⇨	NBSAP Theme 6 on Sustainable Use of Natural Resources NBSAP Theme 18 on Other Sectoral Integration
National Target 8 on Pollution	⇨	NBSAP Theme 6 on Sustainable Use of Natural Resources NBSAP Theme 13 on Environmental Assessment NBSAP Theme 18 on Other Sectoral Integration
National Target 9 on Invasive Alien Species	⇨	NBSAP Theme 4 on Biological Introductions

National Target 10 on Protected Areas	⇨	NBSAP Theme 3 on the Ecological Network of Protected Areas NBSAP Theme 9 on Biodiversity Financing NBSAP Theme 13 on Environmental Assessment
National Target 11 on Species Conservation	⇨	NBSAP Theme 1 on Genetic Resources & Diversity NBSAP Theme 2 on Species & Habitats NBSAP Theme 3 on the Ecological Network of Protected Areas NBSAP Theme 4 on Biological Introductions NBSAP Theme 5 on Sustainable Use of Biological Resources NBSAP Theme 12 on Enforcement NBSAP Theme 13 on Environmental Assessment
National Target 12 on Genetic Resources for Food & Agriculture	⇨	NBSAP Theme 1 on Genetic Resources & Diversity
National Target 13 on Ecosystem Restoration	⇨	NBSAP Theme 2 on Species & Habitats NBSAP Theme 3 on the Ecological Network of Protected Areas NBSAP Theme 4 on Biological Introductions NBSAP Theme 6 on Sustainable Use of Natural Resources NBSAP Theme 13 on Environmental Assessment
National Target 14 on Climate Change	⇨	NBSAP Target 7 on Climate Change
National Target 15 on Access and Benefit Sharing	⇨	NBSAP Theme 1 on Genetic Resources & Diversity
National Target 16 on the NBSAP Implementation	⇨	All NBSAP Themes
National Target 17 on Contribution of Local Communities	⇨	NBSAP Theme 11 on Participatory Conservation
National Target 18 on Knowledge Generation	⇨	NBSAP Theme 13 on Environmental Assessment NBSAP Theme 14 on Research & Development NBSAP Theme 15 on Biodiversity Monitoring
National Target 19 on Capacity for Implementation	⇨	NBSAP Theme 8 on Pro-biodiversity Businesses and a Green Economy NBSAP Theme 9 on Financing Biodiversity NBSAP Theme 16 on Networking & Information Exchange NBSAP Theme 17 on Capacity Building

Those NBSAP themes that address direct drivers of biodiversity loss are as follows:

- Theme 1 on Genetic Resources addresses the threat of genetic erosion;
- Theme 2 on Species & Habitats addresses the threats of species extirpation and habitat loss;
- Theme 4 on Biological Introductions addresses the threat of invasive alien species and biosafety issues in relation to genetically modified organisms;

- Theme 5 on Sustainable Use of Biological Resources addresses the threat of overexploitation of species;
- Theme 6 on Sustainable Use of Natural Resources addresses the threat of different forms pollution including but not limited to nutrient overload; and
- Theme 7 on Climate Change addresses the threat of climate change and associated environmental impacts.

The other themes in Malta's NBSAP address indirect drivers of loss, such as lack of public awareness, unsustainable consumption behaviours, insufficient biodiversity mainstreaming and failure to recognise the true value of biodiversity and ecosystem services in policy and decision making, as well as limitations in the required knowledge base to draw up effective conservation action, resource mobilisation and capacity building.

The NBSAP development process for Malta has taken into account the guidance provided in Decision IX/8 adopted by the CBD COP9. This was primarily with respect to the formulation of measures that consider the need to:

- identify priority and strategic actions to achieve the three objectives of the Convention, at a national level;
- take into account the ecosystem approach;
- highlight the contribution of biodiversity, including, as appropriate, ecosystem services, to national development and human well-being;
- encourage the participation of the general public, and other stakeholder groups, including the private sector, in initiatives/activities that benefit biodiversity; and
- improve the science/policy interface.

The development of Malta's NBSAP involved a consultation process with governmental entities and with stakeholders. The NBSAP also includes a review process, with reviews required in 2014 (as documented via this national report to the CBD), 2017 and 2020, to identify successes, constraints and impediments to implementation, and to identify ways and means of addressing such constraints and impediments, including through the revision of the document, where necessary.

2.3 How the NBSAP addresses the integration of biodiversity into broader national plans, programmes and policies

NBSAP measures under themes 1, 4, 5, 6, 7, 8, 13 and 18 will in particular contribute to the goal of biodiversity mainstreaming into broader national plans, programmes and policies, economic and social sectors and levels of government. The NBSAP calls *inter alia* for continued and strengthened integration of biodiversity considerations in national decision-making, in national accounting, in business schemes, in environmental assessment, and in various sectors, which include agriculture and rural development, fisheries and aquaculture, tourism and spatial planning.

2.4 Implementation of the NBSAP vis-à-vis legislation, policies, established mechanisms and funded projects

2.4.1 Legislation

Malta applies the better regulation initiative to strengthen its legal regime that affords protection to the environment and the regulation of activities that may harm the environment and biodiversity. Amongst the legislative instruments that were published since Malta's 4NR (that is since 2010), the following are listed:

ACTS	- Act No. X of 2010 - Environment and Development Planning Act, 2010
GOVERNMENT NOTICES	- Government Notice 851 of 2010 - Flora, Fauna and Natural Habitats Protection Regulations, 2006 - Special Areas of Conservation of International Importance - Government Notice 473 of 2011 - Trees and Woodlands Protection Regulations, 2011 - Government Notice 683 of 2012 - Emergency Conservation Order - Ġnejna Bay (revoked by GN 985 of 2012) - Government Notice 1235 of 2012 - Conservation Order - Wied il-Qlejgħa (Chadwick Lakes) Rabat, Malta
LEGAL NOTICES	- Legal Notice 110 of 2014 – The Conservation of Wild Birds (Amendment) Regulations, 2014 - Legal Notice 341 of 2013 – The Conservation of Wild Birds (Amendment) Regulations, 2013 - Legal Notice 485 of 2010 - The Deliberate Release into the Environment of Genetically Modified Organisms Regulations, 2010 - Legal Notice 265 of 2010 - Contained Use of Genetically Modified Micro-Organisms (Amendment) Regulations, 2010 - Legal Notice 497 of 2010 - Strategic Environmental Assessment Regulations, 2010 - Legal Notice 200 of 2011 - Trees and Woodlands Protection Regulations, 2011 - Legal Notice 217 of 2013 - The Majjistral Nature and History Park Site Regulations, 2013 - Legal Notice 322 of 2013 - Flora, Fauna and Natural Habitats Protection Amendment Regulations, 2013

The above list is by no means comprehensive since it does not include those pieces of legislation that are renewed on an annual basis.

2.4.2 Policies

Information on adopted sectoral policies and whether and how these integrate biodiversity considerations is provided in Sections 2.7, 2.8 and 2.9 of Malta's CBD 5NR.

"Guidelines on Managing Non-Native Plant Invaders and restoring Native Plant communities in terrestrial settings in the Maltese Islands"[52] have been adopted by MEPA in 2013, following a period of public consultation. Such guidelines address issues related to the control and/ or eradication of invasive alien species, and the restoration of native plant communities in the Maltese Islands and are further complemented with earlier related guidance documents such as the "Code of Conduct on Horticulture of Invasive Alien Plants."[53]

2.4.3 Designation and Management of Protected Areas

In 2011, Malta designated three additional marine special areas of conservation (SACs) (and 1 marine site was changed from national to international importance), such that Malta had a total of 39 SACs (including 5 marine areas), 32 of international and 7 of national importance, by the end of that year. Furthermore, in 2011, 3 more Areas of Ecological Importance (AEI) and Sites of Scientific Importance (SSI) were scheduled, bringing the total to 73. In these areas, specific policies guide the type of

[52] http://www.mepa.org.mt/file.aspx?f=9658
[53] http://www.mepa.org.mt/file.aspx?f=6839

development that can take place. Also in 2011, the boundaries for 30 tree protection areas were published, covering 5.35km^2, with the aim of enhancing protection of one of Malta's important ecosystems. Malta also has 3 Nature Reserves affording protection to islets, as well as 26 Bird Sanctuaries. In addition, since 2007, all beaches and swimming areas in close proximity to urban areas or major roads, including 11 specifically named beaches, were afforded legal protection from hunting. As of end 2011, the Maltese Islands had a total of 21.5% of land area under some form of legal protective designation.

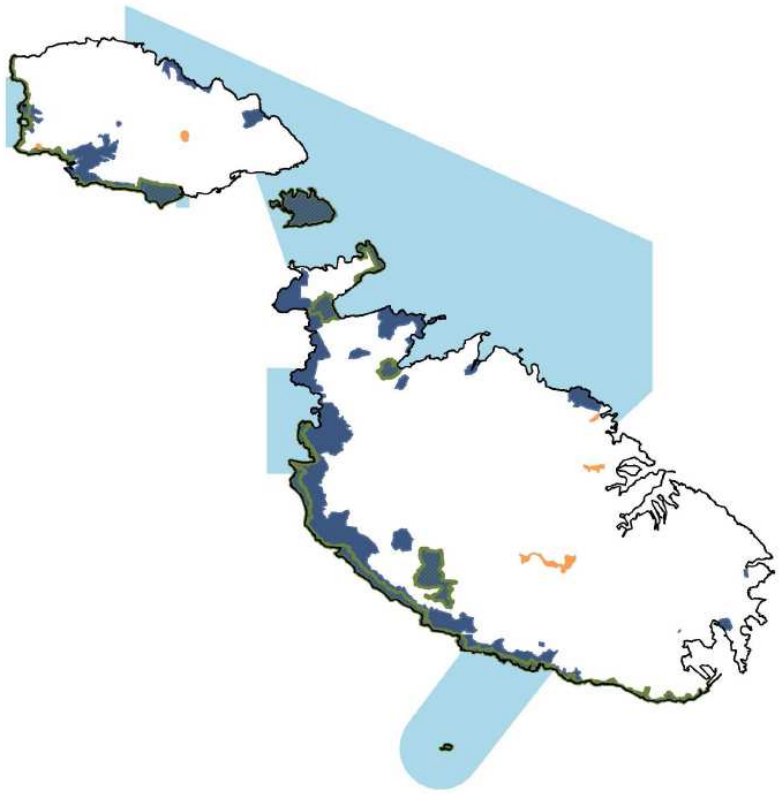


Figure 8 – Special Areas of Conservation of National Importance (pink shading) and the Natura 2000 Network in the Maltese Islands showing Special Protection Areas (green shading); Special Areas of Conservation of International Importance – Terrestrial (dark blue shading), and Special Areas of Conservation of International Importance – Marine (Light Blue Shading) Source: MEPA, 2014

A number of areas in Malta have been designated as part of the EU Natura 2000 network (Figure 8). As of end 2011, Malta had 27 terrestrial sites covering 41.8km^2 or 13.1% of land area, and 1 marine area of 8.5km^2 forming part of the network. Four additional marine sites were submitted to the European Commission in 2011 to form part of the Natura 2000 network. These new sites were primarily identified because they provide protection for over 80% of the *Posidonia* beds found in the Maltese territorial waters, but also include other marine habitat types and species, particularly the marine endemic Maltese topshell, *Gibbula nivosa*, *Cymodocea nodosa* meadows and reefs. These sites were adopted as Natura 2000 sites on the 16 November 2012. The 5 marine sites in all cover an area of 190.8km^2. Moreover, in 2013 Malta designated its first Marine Important Bird Area (IBA) around the Malta-Gozo channel.

Some amendments to selected terrestrial sites were also considered and accepted and have led to 13.3% of land area being covered. In line with the obligations of the Birds Directive by December 2011 Malta had designated 13 special protection areas (SPAs) covering 16.5km^2 or 5.2% of land area, which are automatically Natura 2000 sites. In some cases the areas designated under the two Directives overlap.

A number of EU co-funded projects are ongoing which will shed light on any new additional marine sites to designate. The ongoing LIFE Baħar Project is aimed at assessing selected marine habitat types and designating additional Natura 2000 sites. The ongoing EU funded Malta Seabird Project aims at creating a catalogue of marine Important Bird Areas (IBAs) for three seabird species: *Puffinus yelkouan* (Yelkouan shearwater), *Calonectris diomedea* (Cory's shearwater) and *Hydrobates pelagicus* (European storm petrel). This project shall employ various bird tracking methodologies to gain further knowledge on key areas, which sites shall then be recommended as marine SPAs. The ongoing LIFE Migrate

Project aims at enabling studies to be carried out on the status of the population of the loggerhead turtles (*Caretta caretta*) and of the bottlenose dolphins (*Tursiops truncatus*) in the Maltese Islands. This project, aims to identify any potential hotspots for the species (such as potential feeding areas or important migratory routes), to assess the conservation status of the species, and to analyse adequate sites for protection, with the aim of designating relevant sites of community importance (SCIs) for these two species.

In April 2014, the project titled "Natura 2000 Management Planning for Malta and Gozo", which was co-funded through the European Agricultural Fund for Rural Development (EAFRD), was successfully completed. This project resulted in the preparation of a compliment of 22 draft management plans and 8 draft conservation orders, which plans and orders cover management provisions for all terrestrial Natura 2000 sites found in Malta and Gozo. Furthermore, some terrestrial Natura 2000 sites are already being managed in liaison with NGOs (namely is-Simar & l-Għadira wetlands; Majjistral Park; and Ramla l-Ħamra) and government entities (Buskett - Parks Department). Moreover, a number of other sites are also already covered by statutory conservation measures, including Filfla; Ħaġret il-Ġeneral (Fungus Rock); Selmunett/Il-Ġżejjer ta' San Pawl (St Paul's Islands); Għajn Tuffieħa; and Il-Majjistral. This management planning process also included the gathering of information, carrying out of surveys and updating existing data, defining the conservation objectives and identifying management measures for each site, with intensive stakeholder involvement and participation. Such a scheme, also aimed to increase awareness of Natura 2000 amongst the general public and stakeholders,

An interpretation manual for marine habitats has been compiled as part of the MedPAN North Project (under the Programme Med). Under this project, two underwater trails, one at Għajn Tuffieħa, and a second at Ramla tal-Mixquqa (popularly known as Golden Bay) were set up for use in Summer 2013. Through the same project, Malta has also assessed innovative financing opportunities for marine Natura 2000 sites.

2.4.4 Institutional and cooperative mechanisms

In May 2013 the Government decided to establish a dedicated governance structure within the Parliamentary Secretariat for Agriculture, Fisheries and Animal Rights, which falls under the domain of the Ministry for Sustainable Development, the Environment and Climate Change (MSDEC), in order to oversee and drive the implementation of Government policy in relation to sustainable hunting governance. The structure, titled "Wild Birds Regulation Unit" [54]. The "Conservation of Wild Birds (Amendment) Regulations, 2013" (Legal Notice 341 of 2013) defines the responsibilities of the new Wild Birds Regulation Unit. This Unit is charged with implementing the decisions of the National Ornis Committee and also acts as Secretariat to the Committee and assist this Committee in the performance and in the carrying out of its functions. The Unit is also responsible for the issuing of licences under these regulations. More information is available online[55]. The setting up of the WBRU resulted in a qualitatively different level of coordination between governmental and non-governmental entities involved in the implementation of the Birds Directive. The Unit spearheaded a series of legal reforms, ensured timely compilation and submission of all outstanding reports to the European Commission (including derogation reports previously pending since 2009, the submission of the Article 12 report and necessary follow-up and response to EU Pilot requests), coordinated improvements to field enforcement, ensured compilation and analysis of vital statistics, as well as strategic communication with stakeholders and the general public.

[54] https://msdec.gov.mt/en/Pages/WBRU/Wild-Birds-Regulation-Unit.aspx
[55] http://msdec.gov.mt/en/Pages/WBRU/Wild-Birds-Regulation-Unit.aspx

The de-merger of the Malta Environment and Planning Authority is currently ongoing as required by Government. The Government in collaboration with MEPA has finalised two consultation documents with the salient features that will characterise the setting up of the new Development Planning Authority (DPA) and the Environment and Resources Authority ERA). More information on the process is available online[56].

2.4.5 Funding and Research

Since 2010, Malta embarked on the EU funded biodiversity-related projects described in Tables 25 to 30.

Table 25 - MEDPAN North project	
Funding Instrument:	Programme Med
Project Description:	This project is a continuation of the MEDPAN project in which MEPA participated between 2004 and 2007. MEDPAN has brought 23 organisations from 11 countries to form a network of managers of MPAs in the Mediterranean region. Partners had the opportunity to share experiences and good practices amongst each other, suggest solutions to management problems of marine protected areas, and improve their capacity. It is the aim of MEDPAN North to utilize this network to facilitate the exchange of expertise on the management of Mediterranean MPAs in order to protect and conserve the biodiversity and ecosystems. The project partners aim to come up with common approaches to meet international, European, and national commitments in terms of MPAs networks. They also intend to improve the management efficiency of MPAs and to ensure the sustainable protection of the marine environment while at the same time promoting sustainable economic activities.
Expected Project Deliverables:	MEPA's participation in this project resulted in the following deliverables: A report on marine invasive species and MPAs in Malta; A study on the Noble Pen shell populations in Maltese marine protected areas: Rdum Majjiesa to Ras Ir-Raheb; in the limits of Mġarr ix-Xini (Gozo); and in the limits of Dwejra (Gozo); Compilation of an interpretation manual for marine habitats within the 25NM fisheries management zone around the Republic of Malta; A study which identifies the financing requirements for local marine protected areas and self-financing recommendations; The implementation of two underwater trails at the Rdum Il-Majjiesa MPA; Communication and awareness measures including workshops, and other publicity material.
Lead Coordinator:	WWF France
Project Partners in Malta:	Malta Environment and Planning Authority (MEPA)
Project Duration:	The project was approved for funding under the MED programme in April 2010 and was implemented over a period of 3 years
Project Cost:	€142,000 (15% co-financed by MEPA)

Table 26 – Project on Natura 2000 management planning for Malta and Gozo	
Funding Instrument:	Co-funded by the European Agricultural Fund for Rural Development (EAFRD) under Measure 323 of the Rural Development Programme for Malta, 2007 – 2013
Aim of Project:	To establish management plans and legal provisions for all terrestrial Natura 2000 sites in the Maltese Islands and to increase awareness of Natura 2000 amongst the general public and stakeholders.
Project deliverables:	- Implementing the entire management planning procedure for all terrestrial Natura 2000 sites - gathering information, carrying out surveys, defining conservation objectives and identifying management measures for each site, with intensive

[56] https://www.mepa.org.mt/mepademerger

	stakeholder involvement and participation throughout the entire exercise; - Awareness campaign about Natura 2000 sites in the Maltese Islands amongst the public at large and amongst specific target groups, such as farmers and land managers, to equip all key stakeholders with the knowledge and skills necessary to participate in the management planning process more effectively;
Lead Coordinator:	Malta Environment and Planning Authority (MEPA)
Project Partners:	None
Project Duration:	Initiated in January 2011 and completed in April 2014
Project Cost:	€1,264,598.20

Table 27 - LIFE Malta Seabird Project (LIFE10 NAT/MT/000090)	
Funding Instrument:	Co-funded by the EU's LIFE+ programme
Aim of Project:	To create an inventory of marine Important Bird Areas (IBAs) for three species of seabirds, which breed in the Maltese Islands that is *Puffinus yelkouan, Calonectris diomedea* and *Hydrobates pelagicus*.
Expected Project Deliverables:	- Creation of a complete inventory of Marine IBAs for *P. yelkouan*, *C. diomedea*, and *H. pelagicus* breeding in Malta up to 25 nautical miles, through a combination of boat-based observations, telemetry and modelling, as per established BirdLife International criteria; - Designation of the relevant sites identified through this project as SPAs forming part of the Natura 2000 network in line with Malta's obligations and its jurisdiction within the duration of the project; - Identification of Marine IBAs located within international waters (beyond 25 nm) for the project's three target species, and recommendation of their classification as Marine Protected Areas under international Mediterranean Conservation Agreements, such as the Barcelona Convention or AEWA; - Production of a technical report detailing the overall inventory of Marine IBAs (in both territorial and international waters), including full details and maps of each site; - Enlargement and maintenance of the Central Mediterranean Seabirds at Sea database, following up the results of the LIFE Yelkouan Shearwater project through the creation of a GIS database; - A report on the diets of the three target seabird species, particularly their main prey species; - A report on the quantification of conflict between nesting yellow-legged gulls (*L. michahellis*) and *H. pelagicus* on Filfla and methods to resolve this conflict (if any); - Reports of proceedings from a workshop aimed at countries within the Central Mediterranean concerning collaboration on the designation of shared Marine IBAs in international waters; and - Widespread dissemination of project actions to raise awareness of seabird conservation and Marine IBAs and SPAs of Malta and how Malta is working to achieve its international obligations.
Lead Coordinator:	BirdLife Malta (BLM)
Project Partners:	Office of the Prime Minister (OPM) Malta Royal Society for the Protection of Birds (RSPB) United Kingdom Sociedade Portuguesa para o Estudo das Aves (SPEA) Portugal
Project Duration:	01-SEP-2011 to 30-JUN-2016
Total Project Cost:	€873,964

Table 28 - LIFE MIGRATE Project (LIFE11 NAT/MT/001070)	
Funding Instrument:	Co-funded by the EU's LIFE+ programme
Aim of Project:	To identify the relevant marine areas for the loggerhead turtle and the bottlenose dolphin, in order to designate marine SCIs within Malta's 25 nautical mile Exclusive Fishing Zone (established in 1971).
Project Deliverables:	- A complete inventory of important areas for the loggerhead turtle and the bottlenose dolphin up to 25 nautical miles, through a combination of modelling of

	available oceanographic data and boat-based observations; - A technical report detailing the overall inventory of these important areas including full details and maps of each site; - The designation of the relevant sites identified through this project as SCIs forming part of the Natura 2000 network in line with Malta's obligations and its jurisdiction within the duration of the project; and - Wide publicity of project actions to raise awareness about the conservation of marine mammals and reptiles in Malta and how Malta is working to achieve its international obligations.
Lead Coordinator:	Malta Environment and Planning Authority (MEPA)
Project Partners:	Ministry for Sustainable Development, the Environment and Climate Change (MSDEC), Malta KAI Marine Services
Project Duration:	01-OCT-2012 to 29-APR-2016
Total Project Cost:	€964,006.00

Table 29 - LIFE Baħar for N2K (LIFE12 NAT/MT/000845)	
Funding Instrument:	Co-funded by the EU's LIFE+ programme
Aim of Project:	- To address the dearth of marine habitat data – specifically location, range, conservation status – by collecting existing information, surveying marine areas and analysing the data collected, thereby assisting the established of the distribution of marine habitats listed in Annex 1 of the Habitat Directive, namely sandbanks, reefs, and submerged and partially submerged sea caves, with the aim of extending existing sites and identifying new sites to be included in the Natura 2000 network; - To enable and promote the active participation of all stakeholders in the project, as well as in ongoing activities after the project has ended; - To establish conservation objectives for marine Natura 2000 sites based on the data collected, as well as stakeholder input. This will provide a platform to guide the management of Natura 2000 sites following the project; - To enhance stakeholder understanding of the conservation and management of marine resources, the aims of the project, LIFE+ funding and the Natura 2000 network.
Expected Project Deliverables:	- The creation of a broad habitat map of Malta's marine area; - The production of three scientific reports, containing a detailed analysis of the data collection; - The production of medium to fine maps of protected habitats; - The prioritisation of identified habitats, in accordance with Annex III of the Habitats Directive; - The identification and designation of SCIs, including the possible extensions of existing SCIs; - The creation of Marine Natura 2000 biotope maps and Natura 2000 standard data forms for each designated site; - The improvement of protected area designation, thus fulfilling Malta's obligations as set out by EU directives and other international agreements; - An assessment of the current conservation status of the habitats surveyed; - The setting of conservation objectives for each proposed Natura 2000 site; - The drawing up of a management framework for the designated sites; - An increase in awareness and participation by the organisation of seven scientific committee meetings, six stakeholder seminars, two public meetings and four interviews with the local media; - The production of dissemination of communication material, including 14 notice boards, a short video, a calendar and a project website.
Lead Coordinator:	Malta Environment and Planning Authority (MEPA)
Project Partners:	Ministry for Sustainable Development, the Environment and Climate Change (MSDEC), Malta

	Fundación Oceana, Spain University of Malta, Malta
Project Duration:	01-OCT-2013 to 30-JUN-2017
Total Project Cost:	€2,612,810.00

Table 30 - LIFE SAVING BUSKETT (LIFE12 NAT/MT/000182)	
Funding Instrument:	Co-funded by the EU's LIFE+ programme
Aim of Project:	- To protect the watercourse and its banks supporting the Annex I listed priority habitat - Arborescent matorral with *Laurus nobilis* and Annex I listed species - *Salix Alba* and *Populus alba* galleries, and other trees characteristic of riparian woodland, such as *Fraxinus angustifolia* and *Ulmus* sp. through (i) the repair/restoration/rebuilding of retaining walls that define the watercourse and (ii) a reduction in the run-off of soil and debris from the valley, which cause sedimentation in, and occlusion of, the watercourse; - To protect the stability of the substratum on the valley sides supporting the following Annex I-listed habitats: Arborescent matorral with *Laurus nobilis*, Mediterranean pine forests with endemic Mesogean pines, *Olea* and *Ceratonia* forests, and *Quercus ilex* and *Quercus rotundifolia* forests; - To remove invasive alien species that compete with the targeted habitats and plant new trees characteristic of the targeted habitats;
Expected Project Deliverables:	- Reparation/restoration/rebuilding a stretch of 176m of dry stone ashlar wall along the watercourse; - Rebuilding of 49 arched buttresses along the watercourse; - Safeguarding (as a result of the previous three actions) of 2,971m^2 of Arborescent Laurel matorral habitat and 12,629 m^2 of willow and poplar rivers gallery forests; - Reparation/restoration/rebuilding of 6,297m of dry stone rubble walls along the watercourse and further up the valley sides; - Reparation/restoration/rebuilding of 1,020 m of dry stone ashlar walls along the watercourse and higher up the valley sides; - Safeguarding (as a result of the previous two actions) of: 4,231m^2 of laurel matorral; 14,076m^2 of willow and poplar; 7,441m^2 of habitat Olea and Ceratonia forests; 2,330m^2 of *Quercus ilex* forests and 3,432m^2 of pine forests; - Silt/boulder clearing along 1,208 m (area 9,023m^2) of the watercourse, safeguarding 2,971m^2 of Arborescent laurel matorral and 14,076 m^2 of willow and poplar rivers gallery forests; - Removal of the identified invasive species (*Ailanthus altissima, Vitis sp, Agave spp* and *Ricinus communis*) from the whole area targeted by the project (241,742 m^2) including: 4,231 m^2 of laurel matorral; 14,076 m^2 of habitat 92A0; 7,441 m^2 of habitat 9320; 2,330 m^2 of habitat 9340 and 76,478 m^2 of habitat 9540; - The planting of 3,300 trees characteristic of the targeted habitats.
Lead Coordinator:	Ministry for Sustainable Development, the Environment and Climate change - PARK Directorate
Project Partners:	None
Project Duration:	01-JUL-2013 to 31-MAY-2018
Total Project Cost:	€2,778,772.00

Malta has encouraged and supported various research initiatives, and has commissioned studies and issued permits in relation to threatened and protected species. Examples include monitoring studies on *Pinna nobilis* in marine protected areas in Malta and the distribution and ecology of *Gibbula nivosa*. Studies have also been commissioned on *Armadillidium ghardalamensis* and *Myrmecophilus baronii*. Moreover, research work was also carried out by local experts throughout the years, which has greatly aided in collating invaluable information about local biodiversity. The areas of study were various, and included botany, entomology, ichthyology, mammalogy, ornithology, vegetation surveys, amongst others.

2.5 Contributions of national actions to the implementation of thematic programmes of work and cross-cutting issues under the Convention (an overview)

Contributions of national actions to the implementation of relevant thematic programmes of work under the Convention on Biological Diversity and the Global Strategy for Plant Conservation is provided Appendix III to Malta's CBD 5NR. Overall progress is summarised in Table 31.

Table 31 – Progress on Implementing CBD POWs

Programme of Work	Progress		
	☺ Goal/target/objective being attained - Actions in place to support goal of the POW	😐 Goal/target/objective not yet attained - Actions planned/existing but further impetus is required	☹ Goal/target/objective not being attained - Lack of actions that contribute to the goal of the PoW
CBD Programme of Work on Island Biodiversity	23%	77%	0%
CBD Programme of Work on Inland Waters Biodiversity	38%	62%	0%
CBD Programme of Work on Marine & Coastal Biodiversity	20%	80%	0%
CBD PoW on Agricultural Biological Diversity	0%	100%	0%
CBD Programme of Work on Dry & Sub-humid Land	50%	50%	0%
CBD Programme of Work on Protected Areas	47%	53%	0%
Global Strategy for Plant Conservation 2011-2020	29%	65%	6%

2.6 Obstacles to implementation

The main obstacles to implementation remain essentially constraints in technical, human and financial resources and the need to recognise more at all levels the value of biodiversity and related ecosystem services upon which sectors and society at large depend.

2.7 Biodiversity mainstreaming in key cross-cutting policy instruments

2.7.1 National Environment Policy

A key cross-cutting policy instrument at a national level is the National Environment Policy (NEP) adopted by the Government in February 2012. [57] Its implementation is overseen by the Ministry for Sustainable Development, the Environment and Climate Change (MSDEC). This over-arching policy identifies biodiversity in the Maltese Islands as a strength and is dealt with alongside climate change as a long term sustainability issue. The NEP required the development of a comprehensive strategic framework to protect Malta's biodiversity, which was fulfilled through the adoption of the NBSAP later that same year. The NEP includes measures that would upon implementation positively impact, both directly and indirectly, biodiversity. NEP measures that are directly related to biodiversity are shown hereunder. It is noteworthy that several measures called for in the NBSAP are complementary with those of the NEP.

POLICY: **HALT THE LOSS OF BIODIVERSITY BY 2020**

Outcome	Measure	Indicator
Provision of comprehensive policy framework for biodiversity and ecosystems conservation	(2.6.13) Finalise National Biodiversity Strategy and Action Plan by 2012 (MEPA)	Status of NBSAP
Improved status of biodiversity through the safeguarding of ecosystems, species and genetic diversity	(2.6.14) Ensure an adequate knowledge-base, including baseline information about national biodiversity and	Conservation status of species and habitats
	(2.6.16) Reflect environmental change related to biodiversity in national accounts within umbrella of green accounting in line with EU timeframes (MFEI/NSO)	Green accounts (impact of key sectors on biodiversity and ecosystems)
	(2.6.17) Continue to take environmental education initiatives amongst the general public on the value of biodiversity in contributing to essential life-support systems and resilience (ongoing) (MTCE/MEPA, MEDE, ENGOs)	Initiatives carried out Surveys of community attitudes and behaviour
	(2.6.18) Boost efforts to safeguard species and habitats in the context of the Natura 2000 network to ensure improved sufficiency of coverage by 2017 (MTCE/MEPA)	Sufficiency of Natura 2000 sites (marine)
	(2.6.19) Continue and strengthen the management of protected areas (ongoing) (MTCE/MEPA)	Management status

[57] https://secure2.gov.mt/tsdu/environment-nep?l=1

	(2.6.20) Draw up necessary management plans for terrestrial Natura 2000 sites by 2013 (MTCE/MEPA)	Status of management plans
	(2.6.21) Support the promotion of artists-in-residence programmes to highlight the links between biodiversity and ecosystems and culture by 2013 (MTCE, MEPA)	Status of artists-in-residence programmes
	(2.6.22) Draw up an action plan to restore at least 15% of damaged ecosystems by 2020 (MTCE/MEPA)	% damaged ecosystems restored
Reduce the direct pressures on biodiversity and promote sustainable use	(2.6.23) Prepare policy framework for the agriculture sector to integrate biodiversity considerations into future directions for the sector by 2014 (MRRA)	Status of policy framework % UAA covered by agri-environmental measures
	(2.6.24) Prepare policy frameworks for the fisheries sector to integrate biodiversity considerations into future directions for the sector by 2014 (MRRA)	Status of policy framework Number of policies and/ or measures addressing environmental issues
	(2.6.25) Use spatial planning and environmental assessment tools to control impacts of development on biodiversity (ongoing) (MTCE/MEPA)	Development permitted in protected areas by type
	(2.6.26) Regulate exploitation of species in line with national and international obligations (ongoing) (MTCE/MEPA, MRRA, Police)	Declared catches in *Carnet de Chasse* database Fish catches by type
	(2.6.27) Continue to prevent introduction of invasive alien species through border controls and permitting (ongoing) (MEPA, MFEI, MRRA)	Permits approved by type Enforcement actions
	(2.6.28) Identify, prioritise, control, mitigate and/or eradicate non-native alien species via the drafting of an Invasive Alien Species Strategy by 2015 (MEPA)	Status of alien species

These measures are intended to bring about an improved status of biodiversity through the safeguarding of ecosystems, species and genetic diversity. Progress on these measures is reported in reply to Section 2.12 of Malta's 5NR in relation to similar NBSAP measures.

2.7.2 Sustainable Development

The National Strategy on Sustainable Development (NSSD) for Malta was endorsed by Cabinet in 2007. Information of the NSSD is available in Malta's Fourth National Report to the CBD. More recently, the Sustainable Development Act (Chapter 521 of the Laws of Malta) was enacted in July

2012. [58] The purpose of this Act is to create a framework through which sustainable development is to be mainstreamed across Government. The Office of the Prime Minister is the designated competent authority for the purposes of this Act. Amongst its functions are to ensure the development and implementation of Malta's sustainable development strategy and to revise the said strategy in line with national, European Union and international developments and to establish the direction the revised strategy is to adopt. In line with this Act, the Guardian of Future Generations (with the aim of safeguarding inter-generational and intra-generational sustainable development in Malta) and the Sustainable Development Network (with the aim of promoting sustainable development in Malta) were also set up in December 2012.

2.7.3 Climate Change

Malta as a non-Annex I Party to the United Nations Framework Convention on Climate Change (UNFCCC) submitted its First and Second National Communications on 16 June 2004 and 27 July 2010, respectively[59]. In the 15th session of the Conference of the Parties to the UNFCCC (COP15) and the 5th session of the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol (CMP5), which convened in Copenhagen in 2009, Malta made a request for its inclusion in Annex I to the Convention. This was adopted via Decision 3/CP.15 on Amendment to Annex I to the Convention. Malta is now included in Annex I but still remains without quantified emissions limit or a reduction target for the first commitment period of the Kyoto protocol[60]. Responsibilities arising from Malta's obligations as an Annex 1 Party to the UNFCCC and from the EU's Monitoring Mechanism include the drawing up of the National Greenhouse Gas Emissions and Removals Inventory and the compilation of the report on Greenhouse Gas Emissions Mitigation Policies and Measures and Projections.

Since 2011, the Climate Change and Policy Unit within the Malta Resources Authority (MRA) oversees relevant functions relating to climate change, particularly those related to the implementation of Malta's obligations and related legislation, including the role of compiling the national GHG emissions and removals inventory, which is delegated to the National Emissions Inventory Team within the Climate Change and Policy Unit at MRA. The inventory is drawn up annually in line with Decision No 280/2004/EC concerning a mechanism for monitoring community greenhouse gas emissions and for implementing the Kyoto Protocol and is submitted both to the EU Commission and the UNFCCC. The inventory identifies trends of past and present emissions providing useful information to drive the development of mitigation measures to combat climate change. The inventory covers the six direct GHGs under the Kyoto Protocol. These are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs); and sulphur hexafluoride (SF_6). These gases contribute directly to climate change owing to their positive radiative forcing effect. Also reported are four indirect greenhouse gases: nitrogen oxides (reported as NO_2); carbon monoxide; non-Methane Volatile Organic Compounds (NMVOC); and sulphur oxides (reported as SO2). National submissions on the GHG emissions and removals inventory to the UNFCCC may be viewed online[61].

The Climate Change and Policy Unit at MRA is also involved in the publication of the "Policies and Measures Report", (PAMs) in accordance with Regulation (EU) No 525/2013. This Report gives a comprehensive list of the planned measures in relation to GHG mitigation and the way forward for Malta in respect of its mitigation targets, encompassing the main sectoral Government policies. The PAMs report covers the same sectors that are addressed in the national GHG inventory, namely energy (including transport), waste, agriculture, industrial processes and land use, and contains information on national policies and measures (implemented, adopted and planned) which limit

[58] http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=11917&l=1
[59] https://unfccc.int/national_reports/non-annex_i_natcom/items/2979.php
[60] http://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf#page=10
[61] https://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/8108.php

and/or reduce GHG emissions by sources or enhance removals by sinks and projected GHG emissions by sector for the years 2015, 2020 and 2025. The PAMs Report can be considered as the basic policy and implementation management tool for countries to monitor progress towards achieving their targets on GHG emissions limitation and reduction[62].

Under the effort-sharing Decision, Malta will, from 2013 up to 2020, have annually binding emission limiting targets for all emitting anthropogenic sectors and activities that do not fall within scope of the EU ETS Directive. The end-target for Malta has been set at emissions limited, in 2020, to a maximum +5% compared to 2005 levels, with the interim binding annual targets being determined on the basis of a linear trajectory starting at the average of annual emissions for 2008, 2009 and 2010 and ending at the 2020 target.

To date, local action on climate change has primarily focused on mitigation measures; the vulnerability and adaptive capacity of the Maltese Islands are only recently being addressed. Initiatives undertaken by the Government of Malta to help mitigate the impacts of climate change include *inter alia* the National Strategy for Policy and Abatement Measures to the Reduction of Greenhouse Gas Emissions adopted in September 2009[63]. With respect to adaptation, the National Climate Change Committee appointed in August 2009 was tasked with the drafting of a National Strategy on Adaptation for Climate Change tailored to address Malta's adaptation concerns. The Strategy was subsequently adopted in May 2012[64]. The National Adaptation Strategy seeks to address recommendations in various sectors which are vulnerable to climate change, vis-à-vis water, agriculture, human health and tourism. The strategy also addresses the financial impacts as well as any sustainability issues. The Strategy clearly outlines the policy which should be adopted and it indicates which Authority or Government entity is responsible for the implementation. Time-frames within which such policy actions should be implemented are also included. The National Adaptation Strategy adopts a holistic approach to Climate Change Adaptation in Malta, identifying climate change impacts with particular reference to health and socio-economic policy, water and flooding as well as biodiversity, agriculture and fisheries. The Strategy also provides a recommendation of emergency plans and the circumstances under which they should be formed in high-probability, high-consequence risk areas. Moreover, timely adaptation action will help in reducing the costs and disruptions likely to emanate from adverse climate change conditions, as well as necessarily altering behavioural patterns and enabling better planning and decision-making. Within the biodiversity context, the National Strategy on Adaptation for Climate Change states that a core pillar of the adaptation strategy is the continued conservation of biodiversity and ecologically dependent ecosystems and, wherever possible, the restoration of habitats to a favourable conservation status.

More information in the context of biodiversity and climate change is provided in Section 2.12 of Malta's 5NR for the NBSAP measures CC1 to CC5, as well as EN4.

[62] http://mra.org.mt/wp-content/uploads/2013/07/Malta-PAMs-Report-2013-V1.5.pdf

[63] https://msdec.gov.mt/en/Document%20Repository/Malta%20Climate%20Change%20Adaptation%20Strategy/National%20Climate%20Change%20MITIGATION%20Strategy.pdf

[64] https://msdec.gov.mt/en/Document%20Repository/Malta%20Climate%20Change%20Adaptation%20Strategy/National%20Adaptation%20Strategy.pdf

2.8 Integration of biodiversity into various sectors

2.8.1 Agriculture and Rural Development

Agriculture comprises 51% of Malta's land cover. Agriculture in Malta is affected by EU Common Agricultural Policy and related national policy namely the Rural Development Programme and the National Code of Good Agricultural Practice as well as the Nitrates Action Programme as a requirement of the EC Nitrates Directive. Maltese Farmers that receive direct payments under Pillar I of the Common Agricultural Policy are required to abide to "Statutory Management Requirements" (SMRs) in the field of the environment, food safety, plant and animal health, and animal welfare; and to keep their land in "Good Agricultural and Environmental Conditions" (GAECs) in compliance with standards established by Malta. The "Cross-Compliance Related to EU Aid Applications in terms of the Paying Agency Regulations, 1306/2013 and 1307/2013" (LN 146 of 2005, as amended) lay down the structure for the management of cross-compliance, and EU obligations related thereto, in Malta. The Competent Authority is the Control Unit of the Agriculture and Rural Payments Agency (ARPA). In its capacity as the Control Authority, this Unit ensures compliance with all SMRs and GAECs on a national level. GAECs were developed on the basis of the framework set up of Council Regulation (EC) No 1306/2013 establishing common rules for direct support schemes for farmers under the common agricultural policy and establishing certain support schemes for farmers, while taking into account the specific characteristics of Maltese conditions. The following ten national standards were established, targeting soil erosion, soil organic matter, soil structure and minimum level of maintenance:

- National Standard: On sloping land, ploughing should always be practiced in parallel with the contours of the field.
- National Standard: Load-bearing rubble walls that serve to retain soil on terraced slopes should be maintained in a good condition.
- National Standard: On irrigated land, crop rotation should be practised regularly, and crops belonging to the same botanical family should not be grown successively on the same parcel of land.
- National Standard: Stubble and vegetable residues should not be burnt on the soil, except where by order of the national plant health authority.
- National Standard: Machinery should not be used on the soil when it is flooded or water-saturated.
- National Standard: Unnecessary trampling on the soil with heavy machinery should be avoided at all times.
- National Standard: Uprooting of indigenous trees listed in Schedule I-III of Legal Notice 12 of 2001 is forbidden[65].
- National Standard: The deposition of soil or dumping of sublayer material on garigue habitats is prohibited.
- National Standard: The encroachment of unwanted vegetation leading to abandonment of parts or all of the fields should be avoided.
- National Standard: Olive groves should be maintained in good condition.
- National Standard: Protection of groundwater against pollution.

National guidelines have also been developed to provide a general, user-friendly, summary of the cross-compliance requirements to farmers. Inspectors regularly carry out inspections and 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,

[65] LN 200 of 2010 has repealed and replaced this.

2009" (LN 207 of 2009). The farmers are informed about non-compliances found and breaches (if any).

The second pillar of the CAP focuses on the sustainable development of rural areas by enabling member states to adopt measures that help in curbing negative ecological impacts of agriculture and improving positive impacts via multi-annual rural development measures. 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. Malta is currently finalising its RDP for the period 2014-2020[66].

Under the previous RDPs, those farmers who committed themselves for a five-year minimum period, to implement "agri-environmental measures" that go beyond usual good farming practice, received in return payments that compensated for additional costs and loss of income as a result of altered farming practices (*e.g.* due to reduced production). These agri-environment payments are co-financed by the EU, via the European Agricultural Fund for Rural Development and the Member States. Agri-environment sub-measures adopted under Measure 214 – Agri-environment payments by Malta's RDP 2007-2013 included the following total commitments for the year 2013:

- AEM 1: Use of environmentally friendly plant protection products in vineyards (27.14ha);
- AEM 2: Traditional cultivation of sulla through crop rotation (0ha);
- AEM 3: Low input farming (1,379.91ha);
- AEM 4: Suppression of the use of herbicides in vineyards and fruit orchards (362.12ha);
- AEM 5: Establishment and maintenance of conservation buffer strips (0.52ha);
- AEM 6: Conservation of rural structures providing a natural habitat for fauna and flora (99.45ha);
- AEM 7: Providing a healthy forage area for bees (21.15ha);
- AEM 8: Support for organic farming (14.63ha);
- AEM 9: Support for the conservation of species in danger of genetic erosion (61.59ha);
- AEM 10: Support for the conservation of genetic resources in agriculture (n/a); This sub-measure is not an AEM *per se*, it is a project type sub-measure. The beneficiary is the Plant Health Directorate which is implementing a €2.22million project.

There also 'Packages' which consist of a combination of 2 AEMs:

- PAK 1 (AEM 2 and 3): 0.37ha
- PAK 2 (AEM 1 and 4): 58.74ha

Under Measure 214 – agri-environment payments, the sub-measure 3 (low input farming) and sub-measure 4 (suppression of use of herbicides in vineyards and fruit orchards)focus mainly on the restriction of the use of plant protection products, especially herbicides. The ease or even economically beneficial requirements might be the main reason for the popularity of these sub-measures, since in most cases, the beneficiaries are entitled to extra support without any effort or change in cultivation methods in order to fulfil the requirements. The following barriers to uptake are identified for Malta:

- Organic farming has low uptake, due to the low demand for organic produce and the extensive land fragmentation in Malta, which renders it more difficult for beneficiaries to comply with the requirements of organic farming.
- The poor uptake of the combined measures (packages) may be due to the fact that the payment rate of combined measures is below the level when the measures are applied separately. Due to

[66] http://eufunds.gov.mt/en/Information/Pages/Launch-of-the-Public-Consultation-process-on-the-Environmental-Report-of-the-Strategic-Environmental-Assessment-of-the-Rura.aspx

the small areas under which commitments are made, the effectiveness of the measure is rather low. Since the amount of support is calculated upon the size of the land, the fragmented holdings and the small size of the parcels affect the value of the compensation received by the farmers.

Malta's Control Authority on organic farming is the Malta Competition and Consumer Affairs Authority (MCCAA). Between 2010 and 2011, the area of land cultivated using organic farming methods increased by 17.5%, covering 25ha of the Maltese Islands in 2011. This represented approximately 0.21% of total agricultural land and 0.22% of Utilised Agricultural Area (UAA). In 2011 there were 15 certified organic producers in the Maltese Islands. It is estimated that in 2011, 29.6% of the organically cultivated land was used for the production of fresh vegetables, melons and strawberries, 18.6% for growing grapes, and 11.2% for the cultivation of olives. In 2011, the area used for organically-cultivated olives increased by 17.2 percentage points to 2.8ha, while that used for grapes increased by 14.9 percentage points to 4.6ha (Source – State of the Environment Indicators 2010-2011).

Government priorities in this sector are also reflected in the NEP with plans to enhance the stewardship role of agriculture in protecting the rural environment, through rural development and other agricultural programmes. Within the rural development context, economic diversification that promotes and works with the rural environmental context will be sought. Within Gozo, efforts will aim at encouraging sustainability in the agricultural sector, through education the adoption of environmentally-beneficial practices in agriculture, such as Integrated Pest Management, Integrated Resource Management, and sustainable water use, leading towards the adoption of organic farming practices. The NEP also specifically calls for the formulating of a policy framework for the agriculture sector in order to integrate biodiversity considerations into the future directions in line with the targets of the EU biodiversity strategy. One NEP measure also addresses the need to ensure that financial requirements related to environmental obligations are reflected in rural development programmes by 2014.

Malta is currently working on its RDP for the next financial programming period which runs from 2014 to 2020. Such RDPs are deemed important for biodiversity mainstreaming in this sector due to agri-environment measures that may benefit biodiversity. The new programme shall address the following 5 priorities: water, waste and energy; Maltese quality produce; sustainable livestock; landscape and environment; and the wider rural economy and quality of life. A number of measures and sub-measures have been identified for implementation. Those of relevance to biodiversity include the following: investments improving the resilience and environment value of forest ecosystems, payment for agri-environment-climate commitments, support for conservation and sustainable use and development of genetic resources in agriculture, payment to convert to organic farming practices and methods, and payment to maintain organic farming practices and methods. The submission to the Commission of the first draft of Malta's new Rural Development Programme is planned for early 2014 with approval and adoption of programme expected end of 2014 and then launch of new measures/schemes in 2015. The following agri-environment-climate measures are proposed in the draft RDP (2014-2020):

- AEM 1: Measure to control weeds in orchards and vineyards;
- AEM 2: Measure for the planting of trees – Sub-measure A on support for the removal of invasive species with endemic and indigenous tree species; Sub-measure B on support for the planting of endemic and indigenous tree species on terraced fields and Sub-measure C on support for the control of *Arundo donax* in valley systems;
- AEM 3: Measure supporting the introduction of bee boxes on holdings;
- AEM 4: Measure for the implementation of an integrated pest management plan targeting vineyards and orchards;

- AEM 5: Measure for the implementation of a soil management and conservation plan on a holding level
- AEM 6: Measure for the integration and maintenance of autochthonous Maltese farm species – Sub-measure (A) on Maltese black chicken; Sub-measure (B) on Maltese rabbit "Tax-Xiber"; Sub-measure (C) on Maltese ox and Sub-measure (D) on holm oak, carob and mulberry.

A Strategic Environmental Assessment on Malta's draft RDP was carried out. The draft environment report concludes that impacts on biodiversity are largely expected to be positive because of the different contributions and interactions of the various articles of Regulation 1305/2013 and sub-measures of the draft RDP. Of particular relevance to the achievement of positive impacts are the measures associated with training and advisory services (Articles 14 and 15) that will enable the farmer or operator to understand the link between agriculture and the environment and the importance of environmental sustainability. Direct impacts are expected from the implementation of a number of articles including investment in physical assets (article 17), investment in forestry (article 25), agri-environment measures (article 28), organic farming (article 29), payments to areas with natural constraints (article 31), cooperation projects (article 35) and potentially through the implementation of projects under LEADER (articles 42-44). The draft SEA environment report recommends which measures can be improved for enhanced benefits but overall the impact remains positive. In terms of potential negative impacts, the SEA draws attention for habitat and species considerations when projects are proposed in rural areas. Start-ups (under article 19) could negatively affect biodiversity, on a localised scale[67].

More information on measures undertaken in this sector is available in Section 2.12 of Malta's 5NR in relation to the NBSAP Measures GR1, EN2, EN3, EN4, NR1, NR2, NR3, NR4, FB2, PC2, PC3, SI2, and SI3.

2.8.2 Aquaculture

The legal mandate for the regulation of the aquaculture industry in Malta is laid down *inter alia* by the "Environment Development and Planning Act of 2010" and the "Fisheries Conservation and Management Act of 2001" and subsidiary legislation thereto. The aquaculture industry started off with the initial establishment of marine-based fish farming of *Dicentrarchus labrax* and *Sparus aurata* and then progressed to the introduction of tuna penning of wild-caught *Thunnus thynnus*. In Malta, development in aquaculture, both on land and at sea, necessitates a development permit, while an environment impact assessment (EIA) is required before an aquaculture development is initiated. Fish farms are required to fulfil and adhere to environmental monitoring programmes as required by the development permit conditions. Such terms and conditions also apply for the management of the fish farm in question. Provisions calling for the restoration of a site, in order to address the eventuality of the cessation of the fish farm, are also secured before development takes place. Malta is also duty bound to follow EU policy on aquaculture under the Common Fisheries Policy and other related policy. The Malta Aquaculture Research Centre (MARC) is involved in scientific research on hatching marine species for mariculture and aquaculture species diversification. Malta's Fisheries Operational Programme (2007-2013) prepared in accordance with Council Regulation (EC) No. 1198/2006 on the European Fisheries Fund (EFF), set as one of its objectives under Priority Axis 2, the reduction of the negative impact of aquaculture on the environment. The EMFF OP for Malta for the next financial perspective is yet to be adopted.

One of the measures that Member States are required to undertake in line with the CFP, is the drafting of national strategic plans to remove administrative barriers and uphold environmental, social and economic standards for the farmed-fish industry. The "Aquaculture Strategy for the Maltese Islands –

[67] ADI Associates (2014) – Strategic Environmental Assessment on Malta's National Rural Development Programme for the Programming Period 2014-2020 – Environment Report, Version I – June 2014.

Towards Sustainability" was adopted in June 2014.[68] This Strategy sets out a framework for the period 2014 to 2025 on the underlying principle of improving competitiveness whilst promoting sustainable practices. The strategy focuses on seven important areas:

- Aquaculture as an important maritime sector
- Steering growth towards sustainability
- Clarity in regulation
- Appropriate locations for Aquaculture Zones
- New Potential for growth – search areas
- Sustainability through Improved environmental management
- Competitiveness through innovation

2.8.3 Fisheries

The fisheries industry in Malta is considered mainly to be artisanal, that is, predominantly non-industrial. Maltese fisheries are also considered as multi-species and multi-gear fisheries, whereby fishers alter between fishing gears throughout the year, depending on the species they target. The Department for Fisheries and Aquaculture is regulatory body on fisheries in Malta. It 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, it aims to manage marine areas and preserve fisheries stocks, including their means of sustenance. The "Fisheries Conservation and Management Act of 2001" makes provision for the regulation, conservation and management of fisheries in Malta and matters incidental thereto. The scope of this Act extends beyond the safeguard of fish that are captured for direct consumption, in that 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 Fisheries Division are responsible for fisheries enforcement within Malta's jurisdiction.

National fisheries policy is modelled on the EU Common Fisheries Policy and its reform which took effect as from 1 January 2014. Regulation EU No 1380/2013), defines measures for the conservation and sustainable exploitation of marine biological resources are defined in Part III of the Regulation. The CFP favours the sustainable management of fish and establishes measures against over-fishing and ensuring productivity of fish stocks to maximise sustainable yield (MSY), including via multi-annual recovery and management plans governed by the ecosystem approach. Other goals are ending the practice of discards and reducing unwanted catches, acquiring up-to-date information on state of marine resources, as well as contributing to other environmental policies, such as to the good environmental status of the seas under the Marine Strategy Framework Directive (MSFD).

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. The Malta-EU negotiations on the Fisheries Management Zone (FMZ) have led to the adoption of Council Regulation EC 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.

The "Enforcement of Sea Fishing Conventions Order, 2011" (Legal Notice 209 of 2011 as amended by LN 282 of 2011) addresses within its scope '*the enforcement of restrictions and obligations relating to*

[68] https://msdec.gov.mt/en/Document%20Repository/Aquaculture%20Strategy%202014-25.pdf

sea fishing in conventions to which Malta is a party, to provide for infringements of such conventions to constitute an offence against the Act and to establish the applicable penalties'. These regulations apply to the conventions related to sea fishing listed in the Schedule; the latter lists applicable Commission and Council Decisions, EC Regulations as well as ICCAT and GFCM Recommendations.

The "Implementation and Enforcement of Certain Fisheries Management Plans Order, 2013" (Legal Notice 354 of 2013) adopts the management plans for the Lampuki fishery, Lampara fishery and Bottom Trawling which were recently approved by the European Union. The scope of this Order is the implementation and, where applicable, the enforcement of these management plans in conformity with the obligations of Malta under Article 19 of the Council Regulation (EC) No 1967/2006.

The Malta National Aquaculture Centre actively participates 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 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 collects data on abundance and other biological parameters of 38 species of the priority MEDITS list, including fish, crustaceans and cephalopods. It is an annual summer sampling survey carried out in the Geographical Sub-Area 15 (GSA15). Sampling using the MEDITS standard gear is performed at 45 selected stations at a depth ranging from 45 - 800 m. MEDSUDMED also finances two research survey programmes in Maltese waters: the echo-surveys and ichtyoplankton survey.

Malta conducts an annual National Fisheries Data Collection Programme (NFDCP), in line with Council Regulation 199/2008 and Commission Decision 2008/949/EC. The fisheries independent surveys are carried out through the afore-mentioned MEDITS and the Pan-Mediterranean pelagic survey - MEDIAS.

Provisions have been adopted to deter illegal fishing through various legislative instruments (1224/2009 Control Regulation; IUU Regulation 1005/2008; 1967/2006 GFCM; and Cap. 425 Fisheries Conservation and Management Act).

The Department of Fisheries and Aquaculture is also conducting two projects in collaboration with Fisheries Cooperatives. These projects are Gap 2 and Marine Spatial Planning. The Gap I2 Project is an FP7-funded project which aims to improve collaboration between scientists, fishers and policy-makers[69]. Trawl Industry Management in Malta is one of the case studies of the Gap 2 Project. The Marine Spatial Planning programme protects sensitive zones by prohibiting any trawling activities. This exercise was also done so as to try and reduce conflicts between the fishers themselves and other users of the sea.

The EMFF OP for Malta is yet to be adopted. Detailed information on the fisheries sector is presented in the MSFD Paper Report on "Extraction of Species" that was compiled as part of Malta's Initial Assessment in line with the MSFD requirements[70].

2.8.4 Tourism

Over the past few years, attention has increasingly been drawn towards the importance of sustainable tourism In Malta. The Tourism Policy for the Maltese Islands (2007-2011) was developed in response

[69] http://gap2.eu/
[70] https://www.mepa.org.mt/file.aspx?f=10480

to four key areas: governance, competitiveness, sustainability and macroeconomic matters[71]. It put forward the guiding principles as a basis for future decisions, actions and other matters related to tourism in Malta. The accompanying Tourism Plan outlined a series of actions were to be implemented mainly by the government and the private sector over a five year period in order to drive forth the achievement of the objectives set out in the Tourism Policy. A series of its measures targeted beaches, coastal shores and the marine environment under the theme "Our product offer and destination management". Measures targeting the landscape (protecting and managing rural areas, afforestation projects) were also included.

The current National Tourism Policy covers the period 2012 to 2016[72]. It was launched on 4 July 2012. The policy in question mentions that its objectives are to respond to global drivers of change in tourism amongst which are environmental drivers including natural resources depletion, biodiversity loss and ecosystem degradation. The environmental goals stated in the tourism policy are *inter alia*:

- Ensuring that tourism and the environment not only co-exist but also complement each other;
- Giving added value to natural heritage thereby ensuring its protection;
- Minimising resource use and contributing to a low-carbon, eco-efficient and resource efficient economy;
- Monitoring the tourism industry and taking necessary measures to mitigate pollution and to reduce negative impacts on the environment, especially on rich biodiversity and ecologically sensitive areas such as protected areas. Tourism activities are to be in line with the management plans being drawn up for protected areas as well as permits and regulations established by MEPA.

The Natural Tourism Policy places emphasis on the marine environment as a mainstay of Malta's tourism product. In this regard policy responses inter alia address the preservation of marine waters in line with the EC WFD and MSFD, supporting the upkeep of existing blue flag beaches and awarding of new ones along the coastal areas of Malta and Gozo, safeguarding diving sites, and supporting Natura 2000 management Plans. With respect to rural areas the Tourism Policy includes the policy response stating state awareness of Malta's biodiversity will be increased to tourists that visit the islands and will draw attention to the dependence of tourism activities on the continuity of healthy ecosystems and associated services in order to improve knowledge and foster responsible behaviour among all relevant tourism actors. The Policy document also calls for the development of a rural tourism policy to present the holistic potential of rural tourism, agro-tourism and eco-tourism. With respect to Gozo, one of the policy responses is to market Gozo as an eco-island and promoting countryside walks and focusing on rural and diving tourism.

Under the financial support of the European Regional Development Fund (ERDF 2007-2013) a €10 million Grant Scheme was available for Sustainable Tourism Projects undertaken by tourism enterprises in Malta[73]. This scheme is managed by the Tourism and Sustainable Development Unit within MSDEC. 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.

The rural tourism project entitled "Malta Goes Rural: Sustaining Rural Tourism" is co-funded by the European Agricultural Fund for Rural Development (2007-2013) and is implemented by the Malta Tourism Authority. It seeks to promote the Maltese rural heritage through the set up of walking trails and small scale infrastructural interventions with the main aim to improve accessibility in semi-rural, rural and natural areas. The Malta Goes Rural project comprises four embellishment projects covering

[71] https://secure2.gov.mt/tsdu/tourismpolicy2007-2011?l=1
[72] https://secure2.gov.mt/tsdu/downloads/tp12-16.pdf
[73] https://secure2.gov.mt/tsdu/grant_scheme

il-Maqluba (in Qrendi), Ġnien il-Ġibjun l/o Żurrieq, Misraħ Ħlantun (in Żurrieq) and Tal-Providenza Chapel (in Siġġiewi)[74].

The Malta Tourism Authority commissioned the drawing up of a Master Plan for a Sustainable Diving Industry in Malta. The Master Plan was published in 2011[75]. The drawing up of this master plan involved consultation with divers. Issues that were raised from an environmental perspective and that concern the diving industry are related to fishing and threats to marine life, and enforcement and awareness issues. The Master Plan in this respect puts forward possible actions including better environmental stewardship of diving sites and protecting sites from illegal fishing under Objective 3 on ensuring dive sites are better managed and protected. The document also mentions that "Future management plans for terrestrial and marine Natura 2000 sites are seen as important delivery tools for various aspects of the Diving Master Plan for Malta. The MTA will work with MEPA and other competent authorities to ensure issues identified as relevant to these sites are addressed through these management plans." These issues include clarity on the type of improvements to shore based infrastructure (within or near to Natura 2000 sites) that are endorsed by the management plan; and enforcement of anchoring and fishing restrictions at dive sites.

It is recalled that in January 2008, the Malta Maritime Authority (now Transport Malta) issued Notice to Mariners No 5 of 2008 entitled Conservation Areas around Wrecks. The Notice was prepared in the context of the Fisheries Conservation Act, which promotes the stewardship of fish stocks and regulates commercial fishing practices. The Notice was supported by certain dive clubs in Malta who saw it as a mechanism to maintain the abundance and diversity of fish species at certain wreck sites. The Notice also expressly prohibits spear fishing and the use of fishing gear such as set bottom lines, trammel nets, gill nets and entangling nets, encircling nets, demersal pots, and traps are prohibited in these areas. The Master Plan mentioned above calls for the review of this Notice to Mariners to consider the benefits of further no Stopping areas around the remaining wreck dive sites.

The Blue Flag Programme is represented in Malta by Nature Trust. Awards achieved for 2013 included blue flag status for 8 beaches and 1 for beach of quality:

- St. George's Bay (SGB) - Blue Flag
- Buġibba Perched Beach (BPB) - Blue Flag
- Mellieħa Bay (MB) - Blue Flag
- Qawra Point - Blue Flag
- Ramla l-Ħamra (Gozo)- Blue Flag
- Għajn Tuffieħa - Blue Flag
- Golden Bay - Beach of Quality
- Fond Għadir - Blue Flag
- Paradise Bay Hotel Resort - Blue Flag[76].

More information on this sector in the context of Malta's NBSAP is found in Section 2.12 of Malta's 5NR with respect to measure SI8.

2.8.5 Waste

[74] http://www.mta.com.mt/page.aspx?id=294
[75] http://www.mta.com.mt/divingmasterplan
[76] http://www.mta.com.mt/blueflag

The statutory and regulatory waste management functions on the Maltese Islands are divided between the Malta Environment and Planning Authority with respect to regulating waste management (regulation of all waste management facilities and activities) in the Maltese Islands, and WasteServ Malta Ltd, which in turn is responsible for organising, managing and operating integrated systems for waste management. Malta has built its waste management regulatory regime based on the EU Waste Policy, which is in turn based on the objectives of preventing waste and promoting re-use, recycling and recovery so as to reduce the negative environmental impact. EU waste policy includes horizontal legislation on waste management, which is then complemented by more detailed legislation concerning waste treatment and disposal operations as well as legislation to regulate the management of specific waste streams. The revised Waste Framework Directive (Directive 2008/98/EC), is transposed by the "Waste Regulations, 2011" (LN 184 of 2011).

Malta is obliged, under EU waste legislation, to submit a Waste Management Plan covering different waste streams as well as a Waste Prevention Plan. In order to avoid having a multitude of documents for the sector and to focus stakeholder attention, Government has decided to merge the previous concept of separate documents, a Strategy, intended for local policy guidance, and a Plan, intended for local policy guidance and compliance to the Directive, within one Plan. The "Waste Management Plan for the Maltese Islands – A resource Management Approach (2014-2020)" was adopted in January of this year[77]. This Plan covers the different waste streams in a holistic manner with a view to providing solutions which complement and reinforce one another. Its core aim is to that of moving waste management in Malta up the waste hierarchy through increased prevention, re-use, recycling and recovery. Malta's Waste Prevention Plan focuses upon:

- heightening the awareness on the need to reduce waste arisings through appropriate behavioural changes;
- the reduction of municipal solid waste volumes;
- reducing food waste;
- increasing green public procurement to waste management;
- understanding in more detail promotional and unaddressed mail;
- undertaking efforts to limit construction and demolition waste.

Malta's wider waste management plan, on its part, recognises the need to meet a series of targets not least to reduce the generation of waste and to increase source separation so as to promote recycling and reduce landfilling. Malta is obliged to reach the following targets:

- recycle 50% of paper, plastics, metal and glass waste from households by 2020;
- only 35% (based on 2002 levels) of biodegradable municipal waste will be allowed to landfill by 2020;
- recover 70% of C&D waste by 2020;
- collection of 65% of the average weight of electrical and electronic equipment placed on the national markets by 2021;
- for electrical and electronic equipment placed on the national markets achieve 55%, 70%, 80% and 85% re-use and recycling 75%, 80% and 85% recovery by 2018;
- collection rates for waste portable batteries to reach 45% by 2016;
- to re-use and recover 95 % of an average weight per vehicle per year by 2014.

In order to address such obligations the Plan proposes various initiatives including amongst others:

[77] https://msdec.gov.mt/en/Document%20Repository/Waste%20Management%20Plan%202014%20-%202020%20-%20Final%20Document.pdf

- review of the current collection system so as to provide the existing and upcoming Mechanical Biological Treatment (MBT) plants with source separated organic waste, promote further recycling of plastic, paper, metal and glass at a household level and discourage the generation of mixed waste and completing re-structuring by 2015 to coincide with the completion of the Malta North MBT;
- introduce a third collection of clear organic waste to improve the performance of the MBT plants in Malta and in terms of Malta's obligation to reduce biodegradable municipal waste (BMW) going to landfill;
- develop potential solutions that will prevent the generation of construction and demolition (C&D) waste in favour of maximising the limestone resource;
- revise the eco-contribution legislative framework in order to make it more conducive to business, reduce administrative burden and encourage the setting up of more schemes; and
- consider the setting up of a Waste Management Stakeholders Group in order for Government to regularly engage interested stakeholders on the achievements and proposals being contemplated such that constant feedback may be sought from those directly involved in the sector.

The implementation plan within the Waste Management Plan for the Maltese Islands (2014 – 2020) addresses the following key issues:

- Preventing waste at source;
- Achieving EU and national waste targets;
- Further promoting the Extended Producer Responsibility (EPR);
- Reviewing existing collection practices (Frequency & Time);
- Introducing separate collection of bio-waste;
- Increasing treatment capacity;
- Bearing costs of commercial and industrial waste management by commercial and industrial entities;
- Permitting quarries for backfilling operations;
- Revising the Eco-Contribution regime; and
- Limiting exports of waste as far as possible to those cases where there is no local recycling/recovery or disposal facility.

The Waste Prevention Plan that is incorporated in the Waste Management Plan for the Maltese Islands (2014 – 2020), on the other hand coves the following key issues:

- Qualitative prevention – reducing the use of hazardous substances;
- Quantitative prevention – reducing the generation of waste;
- Priority waste streams – MSW and C&D waste;
- Promoting the reduction at source; and
- Promoting re-use activities.

A Strategic Environment Assessment was undertaken on the Waste Management Plan for the Maltese Islands (2014-2020). The Environmental Report drawn up as part of the SEA Process does refer to Malta's NBSAP and the measure SI9 addressing the waste sector. With respect to biodiversity, the results of the SEA mention that the nature and scale of direct and indirect impacts on biodiversity of waste management operations are almost entirely location specific with respect of where facilities are sited and which areas are affected indirectly by their operations. More detail is provided in the environmental report[78].

[78] https://msdec.gov.mt/en/Document%20Repository/SEA%20Final%20ER_200114_RDT.pdf

The rehabilitation of Malta's largest landfill *Magħtab* (covering an area of 280,000 square metres) was co-financed through EU funds (Cohesion Fund 2007-2013). The project was split into two parts - Phase I, comprising a pilot project of a representative area of the site, and Phase II which comprised the remainder of the site. The rehabilitation process included the following works:

- Formation and capping of slopes;
- Formation of benches (passages);
- Construction of almost 4km of rubble walls;
- Construction of over 230 planting cells;
- Planting of trees and finishing of slopes with vegetation, including indigenous Maltese plants;
- Construction of a large water reservoir and water culvert; and
- Formation of silt ponds and reed beds for the collection and polishing of rain water.

Phase I is complete, with Phase II to be fully completed by 2014. The end goal was the rehabilitation of *Magħtab* into a public recreational park.

Principal waste management facilities are those found at *Ta' Żwejra* (Malta's interim engineered facility)[79], *Għallis* (l/o Naxxar)[80] approved as the site for the development of a long-term engineered landfill facility and the *Sant' Antnin* Solid Waste Treatment Plant[81] (SASWTP - built in 1993). Changes in waste management practices over the years have included the diversion of non-hazardous mineral waste from public landfills to disused quarry sites, the disposal of the solid part of sludge and slurry following natural evaporation of the fluid component (in contrast to previous practices of disposing sludge and slurry in the liquid state) and waste separation. The Marsa Thermal Treatment Facility[82], inaugurated in December 2007, treats waste by incineration at high temperatures, thereby adding another essential contribution to waste treatment in Malta. Its aim is to provide a means by which Malta can dispose of all waste requiring treatment by incineration.

Malta has also benefited structural funds from the European Union to finance a nationwide waste separation project entitled "Establishing Civic Amenity and Bring-In Sites, a separate household waste collection and an integrated communications strategy". Around 400 Bring-In sites (where only paper, plastic, metal and glass can be delivered) were purchased back in 2002 via this funding. Although Bring-In sites were initially managed by WasteServ, the company eventually handed over the responsibility of waste collection and maintenance to Local Councils. Recyclable materials from these bring-in sites are collected separately and taken to the Material Recovery Facility (MRF) at the Sant' Antnin Waste Treatment Plant. Here they are further mechanically and manually sorted, packed in large bales and then sold on a monthly basis to the highest bidder, to be exported for further treatment mainly in European & Asian countries.

Waste collected at Civic Amenity sites (e.g. furniture, mattresses, carpets and clothing; white electrical goods, electronics such as computers, garden waste, edible oil and lubricant oils; batteries, spent bulbs and neon tubes, expired medicines and used syringes, hazardous waste; small quantities of household construction waste and tyres), is either exported overseas for treatment, treated locally, re-used for other purposes or recycled. The purpose of these centres is to optimise the collection of certain types of waste and increase the recovery of secondary materials. There are 5 operational Civic Amenity Sites which are situated at Mrieħel, Ħal Far, Luqa, Magħtab and Tal-Kus in Xewkija Gozo. A sixth Civic Amenity site in Ta' Qali will be opened in 2015.

[79] http://www.wasteservmalta.com/facilities.aspx?id=118
[80] http://www.wasteservmalta.com/facilities.aspx?id=119
[81] http://www.wasteservmalta.com/facilities.aspx?id=120
[82] http://www.wasteservmalta.com/facilities.aspx?id=121

More information on what is being done in this sector is provided in Section 2.12 of Malta's 5NR in relation to the NBSAP measure SI9.

2.8.6 Water Resources

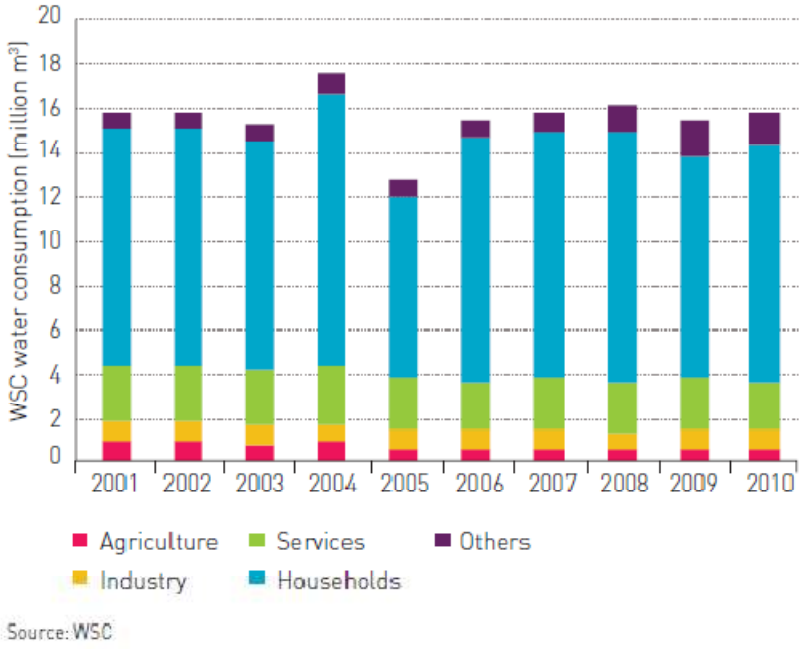


Figure 9 – Billed Water Consumption by Sector for 2001 to 2010

The water resources sector lies within the responsibility of various entities in Malta at present. Certain aspects of water regulation, management and policy currently fall within the portfolio of the Ministry for Energy and Health. Within this Ministry, are the Malta Resources Authority (MRA) entrusted with the regulation of practices, operations and activities in the water sector (apart from energy and minerals), including groundwater abstraction regulation, and the Water Services Corporation (WSC) entrusted in turn with the production and distribution of potable water in the Maltese Islands. The Malta Environment and Planning Authority (MEPA) under the Office of the Prime Minister on the other hand is responsible for the management of coastal waters, transitional waters, and inland surface waters in scheduled and/or protected areas.

A detailed review of water resources in Malta is available (FAO, 2006)[83]. Although the major source of potable water comes from desalination from three reverse osmosis plants located across the Islands, Malta also heavily relies on groundwater supply from aquifers, which are tapped both by private entities and by the WSC. Billed water consumption by sector for the period 2001 to 2010 is shown in Figure 9. In 2010 billed water consumption from the WSC increased marginally by 1.9% to 15.6 million m^3. As indicated in the chart, the main billed water consuming sector in 2010 was the households sector, with a share of 68.7% of total billed consumption. The services sector (comprising Government and the tourism and commercial sectors), with 14.1% utilisation rate, was the second major consumer of billed water. In 2010 the agricultural and industrial sectors consumed 3.2% and 5.2% of total billed water respectively. Private water suppliers also provide fresh water from groundwater sources, but data regarding this type of consumption is not available (Source: State of Environment Indicators 2010-2011).

National policy on addressing groundwater over-abstraction and pollution is essentially modelled on the requirements of the water-related EU directives including *inter alia* the following:

- 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);

[83] http://mra.org.mt/wp-content/uploads/2012/08/5.Malta_Water_Resources_Review.pdf

- "Regulations for the Protection of Groundwater against Pollution caused by Certain Dangerous Substances, 2002" (LN 203 of 2002);
- 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 and LN 426 of 2007) and the "Nitrates Action Programme Regulations, 2011" (LN 321 of 2011); and
- Groundwater Directive (2006/118/EC) – transposed by the "Protection of Groundwater against Pollution and Deterioration Regulations, 2009" (LN 108 of 2009).

Legislation was enacted in 2007 requiring the notification of all private groundwater sources, with plans to meter all significant groundwater abstraction sources by 2015.

With the support of FAO, MRA undertook a number of studies and consultations to articulate a national water policy and formulate a suite of water-related regulations. A Malta Water Resources Review was carried out with the purpose of *inter alia* assessing the current status of water resources and evaluating the demand trends of different sectors. This review shows that, although the demand for groundwater is outstripping supply, there is scope to reverse current trends. In fact this report lists 20 practical options and opportunities for improving the sustainable management of Malta's water resources. Studies undertaken as part of the water resources review indicate that an effective water policy will require improved governance; improved awareness; staged and adaptive implementation; demand management; supply augmentation; the ensuring of equity and justice; and targeted interventions. Subsequently MRA drafted a "Water Policy for the Future", which focuses on three main strategic objectives: the efficiency in water use and maximisation of benefits; the fair allocation of water resources across different sectors and, environmental sustainability. This Policy identifies ten key areas, with accompanying strategic measures. This Water Policy is being revised with a plan to issue a new 10 year National Water Catchment Management Plan, which will be based on revised policy.

Malta through MRA participated in the three year project entitled "Sustainable management of environmental issues related to water stress in Mediterranean islands" whose acronym was MEDIWAT[84]. It was co-financed by the European Regional Development Fund and started on 01 June 2010 and ended on 31 May 2013. The project been aimed at providing Mediterranean islands Decision Makers with the technical, scientific and operational support necessary for elaborating their policy or for designing strategic plans to manage local water resources under quali-quantitative stressed conditions. The main objective of has been to identify and/or develop innovative and integrated solutions and/or tools for managing problems related to water resources shortage and quality worsening. Key deliverables of the project included two strategic master plans for locally manage water resources in small and large Mediterranean islands[85]. Through the MEDIWAT Project, MRA with the collaboration of the Water Services Corporation launched a pilot project on the use of highly polished, treated effluent for groundwater artificial recharge purposes. Articles from the project are included in the final conference proceedings[86].

MRA together with the Water Services Corporation also participated in the now completed MORISO Project (Monitoring and Protection of Groundwater Resources), in which the Authority developed a numerical model of the sea-level aquifers of the Maltese Islands and a data management system for groundwater quality data[87]. For the latter purpose, the software package 'Aquachem' was acquired through the MORISO Project. This system will not only facilitate the interpretation of this data, but also provide the necessary tools for the development of pictorial representations to better depict and

[84] www.mediwat.eu
[85] http://www.mediwat.eu/sites/default/files/Master_plans_copertina.pdf
[86] http://www.mediwat.eu/sites/default/files/D.1.1.6.pdf
[87] www.moriso.it

explain the prevailing situation. It is also worth noting that the results of this monitoring network also support national reporting obligations under the Nitrates Directive and the State of the Environment report.

MRA together with the Ministry for Gozo are involved in the ongoing SWMED Project (Sustainable Water use in the Mediterranean Region), which aims to promote, in each of the participating countries, polices intended to satisfy water and sanitation needs of the population whilst reducing water abstraction and improving the quality of water bodies receiving wastewater[88]. As part of the project, MRA is developing a water-saving campaign in the island of Gozo, with the collaboration of the Ministry for Gozo's Eco-Gozo initiative. The 1st Technical Meeting was held in Victoria (Gozo – Malta) between Monday 1st June and Thursday 14th June 2012. The 3rd Project Meeting was held in Gozo (Malta) between Monday 3rd June and Tuesday 4th June 2013.

At EU level, the Water Framework Directive (WFD – Directive 2000/60/EC amended by Directive 2008/105/EC) and the Marine Strategy Framework Directive (MSFD - Directive 2008/56/EC) are two very important water policy instruments that establish legal and holistic frameworks for protecting, and preventing further deterioration of waters based on the principles of integrated water resource management and the ecosystem-based approach. While the WFD applies to surface waters (rivers, lakes, transitional waters and coastal waters) and ground waters, the scope of the EU water policy is broadened further to marine waters by way of the MSFD. Both instruments make cross-reference to one another, and also to the Birds and Habitats Directives thereby linking water policy to nature policy.

The WFD is transposed nationally by the "Water Policy Framework Regulations, 2004" (LN 194 of 2004, as amended by LN 24 of 2011), with administration entrusted to two designated national competent authorities – Malta Resources Authority and Malta Environment and Planning Authority[89]. The recent amendment in the legislation transposes the requirements of Council Directive 2008/105/EC on environment quality standards (EQS) in the field of water policy, and Council Directive 2009/90/EC which lays down the technical specifications for chemical analysis and monitoring of water status. The WFD defines three types of objectives: "Good Ecological Status" in surface waters, "Good Chemical Status" for groundwater and surface waters, and "Good Quantitative Status" for groundwater bodies. The following timelines are set under the WFD:

- Achieving good status for all water bodies by 2015; and if this is not possible, aim to achieve good status by 2021 or 2027;
- The reduction and progressive removal of hazardous pollutants and priority substances into the aquatic environment within a 20 year time frame from the date of adoption of the WFD; and
- The achievement by 2015 of all objectives and compliance with relevant threshold values for areas that are protected under other European directives.

The WFD is to be implemented at the river basin or water catchment scale. Malta has identified one water catchment district. It is 316 km^2 and covers the country's territory.

The first Water Catchment Management Plan for Malta (WCMP) was launched in 2010 for public consultation and subsequently finalised and published in March 2011. The designation of water bodies contains coastal waters and groundwater. In Malta the WCMP is adopted by the Malta Resources Authority and the Malta Environment and Planning Authority. After the WCMP was finalised, Government set up an Interministerial Committee to oversee the implementation of the

[88] www.swmed.eu

[89] 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.

WCMP, chaired by the Malta Resources Authority (now chaired and coordinated by the MEH), with the participation of key stakeholders, including relevant Ministries, the Malta Environmental and Planning Authority, the Water Services Corporation and Transport Malta. The preparation of the WCMP resulted in the revision of the water bodies designated in 2005 under the characterisation task based on consideration of updated information and better understanding of the WFD requirements. In terms of surface waters the WCMP designates 9 coastal water bodies, classified into 4 different types defined by the predominant physical characteristics of the water mass, namely exposure, water depth and predominant currents, and 15 groundwater bodies. The WCMP provides detail on the monitoring programmes established by Malta for surface waters and groundwaters and defines the environmental objectives for each designated water body and what basic and supplementary measures are needed to achieve them as part of the POM. The WCMP has 40 measures categorised under six main headings: Regulatory, Agriculture and Animal Husbandry Practices; Fisheries and Aquaculture Practices; Industrial Practices and Urban Environment Pressures; Management of Immediate Coastal and Marine Environment; Safeguarding Natura 2000-protected Areas; and Awareness and Enhancement of Knowledge Base. The completion date of each measure is 2015. The third WFD implementation report for Malta (2012) outlines the strengths and weakness of Malta's WCMP[90]. The following information is extracted from the latter report. 5 surface water bodies in Malta have been assessed as being at good or better ecological status. 1 surface water body is in poor status regarding ecological status. The maps in Figure 10 illustrate the ecological status for natural surface water bodies in 2009 and expected status in 2015, on the basis of the third WFD implementation report for Malta (2012), which is quoted data from WISE. This status reflects that assigned to these water bodies on the basis of expert judgement and pressure and impact assessments. Monitoring was not yet operational at the time of publication of the first WCMP. During 2012/2013 a comprehensive monitoring programme was carried out to collect baseline data during the first WCMP cycle. This monitoring data is now being reviewed in light of preparations for the second WCMP (due end 2015) and shall be confirming or otherwise the status assessment of the first cycle.

[90] http://ec.europa.eu/environment/water/water-framework/pdf/CWD-2012-379_EN-Vol3_MT.pdf

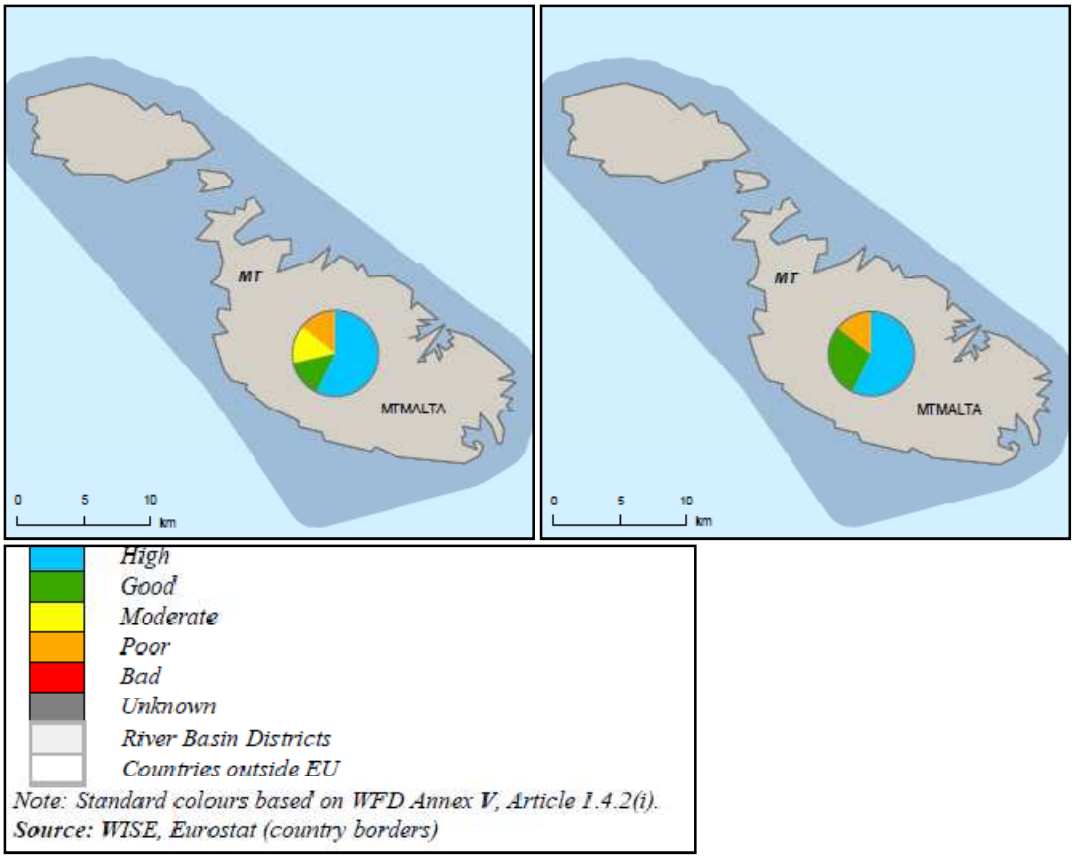


Figure 10 - Maps of ecological status of natural surface water bodies (a) in 2009 (b) in 2015

The MSFD has been transposed into domestic law via the "Marine Policy Framework Regulations, 2011" (LN 73 of 2011) enacted under the auspices of the Environment and Development Planning Act (Cap. 504), the Territorial Waters and Contiguous Zone Act (Cap. 226), the Continental Shelf Act (Cap. 194), the Fishing Waters (Designation) and Extended Maritime Jurisdiction Act (Cap. 479), the Fisheries Conservation and Management Act (Cap. 425), the Authority for Transport in Malta Act (Cap. 499) and Malta Resources Act (Cap. 423). The Competent Authority is the Office of the Prime Minister. An invitation to tender was by MEPA for the socio-economic assessment of the marine waters under the MSFD as per requirements of its Article 8.1(c) and this has been completed. Under the MSFD, Malta along with other Member States is required to achieve and maintain "good environmental status" (GES) in the marine environment by the year 2020 at the latest and to prepare a national marine strategy by 2016, in cooperation with neighbouring Member States. Work on the national marine strategy is ongoing. Malta completed its initial assessment pursuant to Article 8 of the MSFD whereby characteristics and pressures/impacts were assessed to the extent possible in terms of the criteria and indicators stipulated by Commission Decision 2010/477/EU. Malta also carried out the determination of the current environmental status of Malta's marine waters as per Article 9. GES was determined with reference to the outcome of the initial assessment and to existing obligations pursuant to other policies. Malta also established in line with Article 10, a series of environmental targets and associated indicators aimed for the achievement of GES (Table 32). GES statements and associated environmental targets by Malta are shown in the table below. Malta acknowledges the shortcomings associated with this set of GES and targets as identified by the EU Commission's Article 12 assessment of the implementation of Articles 8, 9 and 10 of the Directive. Within this context, the GES and targets would need to be updated in line with the recommendations put forward by the EU Commission, also through strengthening of regional cooperation. Malta however notes that adaptation of the GES and targets is also dependent on the availability and quality of data or knowledge on the marine environment. The upcoming MSFD deliverable, which constitutes a coordinated monitoring

programme to be in place by 15 July 2014, will be taking into consideration the need to address some of the shortcomings identified by the EU Commission's Article 12 assessment. In addition, a programme of measures designed to achieve and maintain GES needs to be developed by 2015 at the latest with entry into operation by 2016 at the latest.

Table 32 – Proposed GES and Environmental Targets

Proposed GES		**Environmental Target set by Malta**
For MSFD Descriptors 1, 4 and 6		
BENTHIC HABITATS	The natural range and extent of marine habitats and species are stable, or otherwise in line with the physiographic and climatic conditions, taking into consideration the sustainable use of the marine environment.	Efforts are undertaken, through implementation of conservation measures or existing permitting and licensing procedures, to ensure maintenance of the distributional range and extent of selected habitat types in selected areas. [Applies to: Littoral Sediment: Biocoenosis of mediolittoral sands; *Posidonia oceanica* meadows; and Shelf sublittoral sediment: Mäerl facies]
	The structure and function of marine habitats ensure their long-term viability	Species composition and/or abundance associated with selected marine habitats is stable over a period of time (to be identified) or is indicative of good status, based on definition of status through the implementation of the EU Water Framework Directive. [Applies to: Littoral Rock and Biogenic Reefs; Shallow Sublittoral Sediment; Shelf sublittoral Sediment; and, Upper Bathyal Sediment]
		Health status of seagrass meadows is maintained. [Applies to: *Posidonia oceanica* meadows]
	The long-term viability of key marine habitats is not compromised by anthropogenic pressures and impacts.	Benthic habitats affected by currently regulated anthropogenic activities show signs of recovery. [Applies to: Littoral Rock and Biogenic Reefs, and, Shallow sublittoral rock and biogenic reefs]
		Maintaining and enforcing Regulations governing fishing activities within the 25 nautical mile Fisheries Management Zone. [Applies to: Shelf sublittoral rock and biogenic reefs; Shelf sublittoral sediment; *Posidonia oceanica* meadows (as relevant)]
		Localised or sensitive marine habitats are afforded legal protection by 2025. [Applies to: Upper Bathyal Rock]
WATER COLUMN HABITATS	Not applicable at this stage	To strengthen knowledge via updated data on key characteristics of the water column, including plankton communities that would enable Malta to further develop the definition of this habitat type in line with the requirements of the Marine Strategy Framework Directive. [Applies to: Water column habitats (including phytoplankton and zooplankton)]
SEABIRDS	The natural range and extent of marine	Efforts are undertaken, through conservation measures or existing permitting and licensing procedures, to

Table 32 – Proposed GES and Environmental Targets		
Proposed GES		**Environmental Target set by Malta**
	habitats and species are stable, or otherwise in line with the physiographic and climatic conditions, taking into consideration the sustainable use of the marine environment.	ensure that the distributional range of breeding sites of *Puffinus yelkouan*, *Calonectris diomedea* and *Hydrobates pelagicus* is stable, with no loss of breeding sites due to anthropogenic disturbance. [Applies to: *Puffinus yelkouan*, *Calonectris diomedea* & *Hydrobates pelagicus*]
	The population abundance of key marine species is stable and their population dynamics are indicative of long term viability.	Population abundance of breeding seabirds is stable over a period of twelve years, taking into consideration the natural variability of the species population and their ecology. [Applies to: *Puffinus yelkouan*, *Calonectris diomedea* & *Hydrobates pelagicus*]
		Longline Fisheries are adequately using mitigation measures aimed at reducing seabird bycatch. [Applies to: *Calonectris diomedea*]
		Efforts are undertaken to control the population of the yellow-legged gull on the islet of Filfla. [Applies to: *Hydrobates pelagicus*]
		Efforts are undertaken to reduce current levels of pressures originating from light pollution and predation by rats in areas to be selected. [Applies to: *Puffinus yelkouan* & *Calonectris diomedea*]
		Marine Special Protection Areas are designated within the framework of the Birds Directive to include marine areas used by seabirds throughout their life cycle. [Applies to: *Puffinus yelkouan*, *Calonectris diomedea* & *Hydrobates pelagicus*]
MARINE REPTILES	The population abundance of key marine species is stable and their population dynamics are indicative of long term viability.	To ensure systematic collection of records of turtle by-catch by the Maltese registered fishing fleet and of data on mortality rate of landed turtles. [Applies to: *Caretta caretta*]
MARINE MAMMALS	The population abundance of key marine species is stable and their population dynamics are indicative of long term viability.	To strengthen knowledge on the conservation status of *Tursiops truncatus, Delphinus delphis* and *Stenella coeruleoalba* in Malta, and on interactions of these species with human activities, with a view to contribute to the regional conservation of marine mammals in the long term. [Applies to: *Tursiops truncatus, Delphinus delphis* and *Stenella coeruleoalba*]
For MSFD Descriptor 2		
NON-INDIGENOUS SPECIES	The introduction and establishment of new invasive non-indigenous species	Efforts are undertaken to detect the occurrence of new NIS in defined assessment areas and to address gaps in knowledge on non-indigenous species, particularly invasive NIS.

Table 32 – Proposed GES and Environmental Targets		
Proposed GES		**Environmental Target set by Malta**
	as a result of human activities is, in so far as practicable prevented.	[Applies to: non-indigenous species in general, particularly those species that exhibit characteristic of invasiveness elsewhere in the Mediterranean or which have already been identified to be invasive in Malta.]
		Evaluate the effectiveness of current measures in relation to non-indigenous species, in the light of increasing knowledge on such species through proposed interim MSFD target to address current knowledge gaps, and take such measures further if necessary. [Applies to: existing measures related to the control of NIS introduction]
For MSFD Descriptor 3		
EXTRACTION OF SPECIES	Sustainable exploitation of fish stocks as indicated by the population age and size distribution of selected commercial species is achieved through effective management and monitoring of fishing effort.	Management and monitoring of fishing activities result in a sustainable fishing effort over time, in line with the measures put forward in Malta's Fisheries Management Plans, with a view to ensure sustainability of the stocks targeted by Maltese fisheries. [Applies to: Lampuki fishery; Lampara fishery; and Bottom otter trawling]
		To ensure better use of fishery independent data in analysis of fish populations. [Applies to: Selected fish species]
For MSFD Descriptor 5		
NUTRIENT ENRICHMENT	Nutrient levels (or ratios as applicable) and chlorophyll-a levels in the marine environment do not depart significantly from natural levels of the Mediterranean Sea.	Long-term data on nutrient levels in the marine environment, or on direct or indirect effects of nutrient enrichment (as relevant), in relation to the main sources of nutrient input, is indicative of the effectiveness of existing mechanisms addressing nutrient input in the marine environment. [Applies to: Nutrient levels or effects of nutrient enrichment (as relevant) in relation to main sources of nutrient input and existing mechanisms to address them.]
	Biological communities (assessed at relevant scales) are indicative of either undisturbed conditions or of slight or localised changes associated with nutrient enrichment.	
For MSFD Descriptor 7		
INTERFERENCE WITH HYDROLOGICAL	Significant adverse effects of permanent alterations of	Changes in hydrographical conditions from large-scale development proposals are adequately assessed through existing permitting and licensing procedures in line with

Table 32 – Proposed GES and Environmental Targets		
Proposed GES		**Environmental Target set by Malta**
PROCESSES	hydrographical conditions on key marine habitats and species are, in so far as practicable prevented or minimised to the extent possible.	the parameters stipulated by the Marine Strategy Framework Directive. [Applies to: Activities in the marine environment which may lead to interference with hydrological processes.]
For MSFD Descriptors 8 & 9		
CONTAMINANTS	Concentration of selected contaminants in relevant matrices is in line with set environmental quality standards, or otherwise in line with undisturbed conditions.	Long-term monitoring of selected contaminants is indicative of acceptable levels of contaminants, with no deterioration trends for non-synthetic and synthetic contaminants in relevant matrices.
		Achieve better understanding of sea-based sources of pollution, through a risk assessment of potential contributions of maritime sectors to contamination in the marine environment, also taking into consideration current measures pursuant to international maritime policies and agreements.
		Setting up a system for collecting, recording and reporting information on significant pollution incidents in line with the requirements of the MSFD, with a view to better understand significance and trends, and to inform any necessary response (strategic as well as incident-related).
CONTAMINANTS IN FISH AND SEAFOOD	Contaminants in fish and other seafood for human consumption do not exceed levels established by Community legislation or other relevant standards.	No defined targets
For MSFD Descriptor 10		
MARINE LITTER	The amount of marine litter entering the marine Environment shows a declining trend over time.	Efforts are undertaken to improve current level of knowledge on marine litter in Malta. [Applies to: Litter washed ashore and/or deposited on coastlines; litter in the water column; litter deposited on the seafloor; microparticles; ingested litter.]
For MSFD Descriptor 11		
UNDERWATER NOISE	Adverse effects of underwater noise on key species groups are minimised to the extent possible.	To work towards building capacity in the field of underwater noise through *inter alia* knowledge gain on key species groups which may be adversely affected by this pressure and streamlining of MSFD requirements in terms of underwater noise in licensing and permitting procedures. [Applies to: underwater noise]

2.8.7 Maritime Spatial Planning

An Integrated Maritime National Strategy Committee has been set in July 2013 up to develop, monitor and evaluate the implementation process of the National Integrated Maritime Policy. The first task of the committee is to identify the main themes and issues that affect directly the country in the maritime sector and to compile a consultation document. A series of consultation sessions will be held with different entities and stakeholders in the marine and maritime sector. All recommendations will be discussed among the committee and a Policy document will be complied and presented to the Ministerial Cabinet for the final approval. More information is available in the press release that launched the committee[91].

2.9 Integration of biodiversity into relevant planning processes

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). A de-merger is however currently in progress since there was a change in government in 2013. The legal mandate is currently provided by the "Environment and Development Planning Act, 2010" (EDPA - Act X of 2010), which makes provision for the planning and management of development in the Maltese Islands.

The land use and development planning framework for the Maltese Islands is currently laid out in the "Structure Plan for the Maltese Islands" adopted in 1992, which shall be replaced by the "Strategic Plan for the Environment and Development" (SPED)[92]. The latter was recently published for public consultation until 20 June 2014. The scope and objectives of the SPED are defined in Article 51 of the EDPA. It shall regulate the sustainable management of land and sea resources together with the protection of the environment and shall be based on an integrated planning system. The public consultation draft of the SPED mentions the following: "*Living organisms and the variety they represent are valuable not only for their inherent value, but they also provide life-support systems upon which we are dependent. The diversity of habitats and species, exhibited by the Maltese Islands is not limited to the rural and coastal areas as urban environments also contain living organisms of conservation value. Despite the legal protection afforded to important habitats over the last 15 years the Maltese Islands' biodiversity continues to be threatened by land development, invasive alien species, overexploitation and climate change.*" Biodiversity is covered by the Thematic Objective 8 calling for the safeguard and enhancement of *inter alia* biodiversity by safeguarding protected areas, strengthening links within the ecological network, facilitating restoration of damaged ecosystems, and controlling activities that may impact on sites and species. Other thematic objectives are deemed to positively impact biodiversity such as Thematic Objective 7 on addressing the promotion of the efficient use of resources in a manner that safeguards natural processes and minimises impacts *inter alia* on the landscape.

The public consultation draft of the SPED also mentions that a sequential approach will be adopted to the use of land. This will involve development being guided, first to the re-use of existing developed land and buildings (through change of use), secondly to re-development of existing developed land and buildings, and finally to the use of vacant land. These general principles were used for the formulation of the National Spatial Framework (NSF) for the SPED. The NSF sets the framework on which all areas of the Maltese Islands will achieve their potential for sustainable development and takes forward the vision of the SPED. Malta's NBSAP was one of the documents referred to in the compilation of the NSF.

[91] http://www.gov.mt/en/Government/Press%20Releases/Pages/2013/July/22/pr1566.aspx
[92] http://www.mepa.org.mt/sped

Regulation of development in the countryside is achieved by prohibiting inappropriate urban development outside the development zone (ODZ). Development in areas located ODZ is currently limited in accordance with Structure Plan policies and related subsidiary policies and guidelines. A concise policy and design guidance document has been drafted by MEPA to regulate future development in areas ODZ[93]. This proposed guidance is intended to support the agricultural sector, especially in assisting and simplifying procedures that address the needs of genuine farmers. The policy also seeks to promote and incentivise diverse farming practices, such as farm gate sales, visitor attractions and agro-tourism. Scheduled buildings in the countryside are also being encouraged to be brought back into active use without compromising their historic and/or architectural value.

Development Control has been enhanced under the EDPA via a series of main changes to the development control process (Part V of the EDPA) whereby proposals for development are vetted with respect to their environmental impact. These changes are intended to ensure greater efficiency and improved consistency in the analysis and decision-making of development permission applications. In line with the main objectives of the MEPA reform process, the Planning Process, together with the proposed time frames, distinguish between applications that are Simple (12 weeks) or Complex and Major Projects (26 weeks). It also proposes that the planning application process is subdivided into 3 main functions: a Screening Process (before a development permission application is formally submitted to the Authority for consideration); a Validation Process, and a Planning Application Process and Decision. The Environment and Planning Commission (EPC) replaced the Development Control Commissions (DCCs). The role of the EPC is specified in Article 31 of the EDPA. The EPC is to be of different divisions which will each deal with analysing and processing different types of development applications and will issue development permissions or licenses.

The EDPA (previously the Development Planning Act) contains the powers necessary for the scheduling (statutory protection) and conservation of areas, buildings, structures and remains of geological, paleontological, cultural, archaeological, architectural, historical, antiquarian, or artistic or landscape importance as well as areas of natural beauty, ecological or scientific value (Article 81 of the EDPA). This planning function is deemed to be an essential part of the planning process and contributes significantly to the development control process. Areas that are scheduled include amongst others Areas of Ecological Importance (relatively large areas designated to protect typical and rare habitats) and Sites of Scientific Importance (sites containing individual species and populations, species assemblages, and geological features). Areas of Ecological Importance (AEI) amount to 20 sites, Sites of Scientific Importance (SSI), amount to 8 sites while there are 42 sites designated as both AEIs and SSI (Source CDDA 2014). .

The potential impacts of plans, programmes and projects (PPPs) development on the environment, including on species and habitats, are assessed through environmental assessments to foresee and hence prevent/mitigate any adverse affects of land development on biodiversity. 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. MEPA is the competent authority responsible for the environmental assessment of projects, whilst the SEA Audit Team within the Ministry for Sustainable Development, Environment and Climate Change (MSDEC) 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; currently under review for repeal

[93] https://www.mepa.org.mt/odz-policy

and replacement as communicated by GN 748 of 2010). Biodiversity concerns are integrated in the development and review of EIA and SEA reports. EIA procedures and related legislation are constantly under review in order to improve such good practice.

Appropriate assessment (AA) is also another type of Environmental Assessment which is carried out when dealing with development proposals in the context of Special Areas of Conservation (SAC) and Special Protection Areas (SPA) as per requirements of Article 6 of the EC Habitats Directive. 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 LN 311 of 2006 (as amended). The AA is required to assess the implications of such operation or activity on the site in view of the site's conservation objectives. The AA is neither 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).

The EIA and AA procedures are major components of the wider development permitting/control (DC) process in Malta. The mainstream DC process is in itself an important vehicle for environmental assessment, broader in scope and also addressing other environmentally-relevant developments which may still have significant impacts both individually and cumulatively.

Essentially, the assessments carried out by the Environment Protection Directorate within MEPA are an integral part of the development control process and are important for determining whether a development should be considered in principle and/or on the basis of more detailed merits, as relevant. If in the affirmative, the terms under which development may proceed are defined (e.g. amendment/adaptation/downscaling of the project for improved compatibility with its environmental context; inclusion of pre-emptive safeguards and mitigation/compensation measures in permit conditions; inclusion of bank guarantees and other deterrent measures to secure effective compliance with environmentally-relevant specifications; etc.). This EPD assessment as packaged through the DC process also provides a holistic framework for comprehensive screening for more detailed requirements as may be relevant, including EIA, AA, operational/nature permitting, exploration of alternatives, and environmental monitoring.

2.10 Synergies in implementation of related Conventions and agreements

Biodiversity-related multilateral environmental agreements such as the CBD, Bern Convention, Bonn Convention (CMS), EUROBATS, ACCOBAMS, Ramsar Convention, SPA & Biodiversity Protocol and CITES are all administered by the Ecosystems Management Unit within MEPA. Synergy in implementation is also aimed at through the NBSAP.

2.11 Consideration of biodiversity in other activities such as international development cooperation and transboundary or regional cooperation

With regards to international development cooperation, Malta participates in meetings of the General Assembly of the United Nations (UNGA) as well as in the negotiations of Millennium Development Goals/Sustainable Development Goals in the context of the post-2015 development agenda. Malta is committed and has continuously worked towards eradicating poverty and achieving the Millennium Development Goals. Malta's own official development policy is based on the need to combat poverty by extending development assistance to the international community, including through climate related projects.

Malta, where possible, actively participates in regional cooperation, as a Party to regional biodiversity-related multilateral environmental agreements (MEAs - such as the Bern Convention and the Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean), as a Member of Regional Fisheries Management Organisations (RFMOs), such as the International Commission for the Conservation of Atlantic Tunas (ICCAT) and the General Fisheries Commission for the Mediterranean (GFCM), and also in key ongoing processes and projects. For instance, Malta is participating in the EcAP initiative under the Barcelona Convention/UNEP Mediterranean Action Plan framework. EcAP aims to achieve Good Environmental Status (GES) of Mediterranean coastal and marine ecosystems, through ecosystem-based management and consistent with the European Marine Strategy Framework Directive. Malta is also represented on the Horizon 2020 Steering Group, which is responsible for the implementation of the Horizon 2020 initiative. This aims to de-pollute the Mediterranean by the year 2020.

2.12 Assessment of the extent to which the NBSAP has been implemented measure by measure

Information on the state of progress in implementing the NBSAP measures is provided hereunder and arranged in order of thematic area. State of progress is indicated using the following legend:

☺ Excellent progress made in translating the measure into action;
😐 Good progress made but further action/initiatives is/are required to implement the measure; and
☹ Inadequate/insufficient/limited progress due to action not yet being made or action still very early in its implementation;
NA – Assessment of progress will be implemented in future reviews since implementation timeline for that particular NBSAP measure is yet to commence.

Indicative timeline for implementation of Measures:
■ 2012-2014; ■ 2015-2017; ■ 2018-2020; ■ 2012-2020 (ongoing measure)

Theme 1: Genetic Resources and Diversity (Code - GR)

GR1	**NBSAP Measure**: Distinct plant and animal genetic resources for food and agriculture (i.e. local livestock breeds and crop varieties, as well as wild relatives/ landraces) are conserved as a genetic insurance in the face of environmental and climate risks as well as for food security. This is mainly achieved via the uptake of appropriate agri-environmental measures to support genetic diversity in agriculture.	**Progress:** 😐
National Actions and Outcomes Achieved: Malta's Rural Development Plan (2007-2013) addressed agricultural biodiversity where mention was made of the loss/erosion of local genotypes through the introduction of modern varieties of livestock and plants. Similar information is also being provided in the draft RDP (2014-2020). There is limited information about authochtonous genetic resources in food and agriculture. In most cases, although it is believed that certain varieties of cultivated crops and certain livestock breeds (e.g. 'Maltese' goat, the 'Maltese' sheep, the 'Maltese' Black chicken, the 'Maltese' turkey, the 'Maltese' rabbit and the 'Maltese' ox) originated in the Maltese Islands; this has not been substantiated with scientific evidence and genetic testing. In some cases, characterisation trials have been launched for some varieties, such as onion and grapes, and interest in the re-introduction and preservation of livestock breeds is increasing. The RDP (2007-2013) included under Axis II the agri-environment measure: support for the conservation of genetic resources in agriculture (conservation of endangered breeds such as the Maltese ox, and endangered plant species Holm oak, 'Tal-Bidni' and 'Maltese' olive varieties, all varieties of carob and mulberries, and citrus - oranges (sweet orange, sour orange, common orange, blood orange, navel orange, orange with a thin rind); lemons (sweet lemon, perpetual lemon); lime (sweet and non-sweet); mandarin; and grapefruit. Conservation-type operations (such as actions promoting the *ex*		

situ and *in situ* conservation, characterisation, collection and utilisation of genetic resources in agriculture, training courses etc.) were also offered support. The indicator "Number of conservation projects related to genetic resources" applied. Sub-measure 10 (support for the conservation of genetic resources in agriculture) was only launched at the end of 2011. When considering the draft RDP (2014-2020), the agri-environmental climate measures for Malta aim to enhance cultivation methods adapted to the environment and the features of landscapes, and specifically to enhance Maltese biodiversity and ecosystem services; promote water conservation and water quality improvement; and contribute to climate change adaptation and mitigation principally by increasing efficiency of input use and improving soil management. Measures (6 in total, with 3 sub-measures for AECM 2, and 4 sub-measures for AECM 6) have been selected on the basis of performing multiple functions in an agro ecosystem context. All AEMs will have a positive impact on biodiversity, enhancing the countryside and promoting practices which work in harmony with our unique ecosystems. In overview, they will cover the following 8 goals: increasing the population of pollinators; enhancing soil conservation; supporting the control of invasive alien species; increasing tree cover and greening of landscapes; protecting and enhancing nature-rich valley systems; reducing contamination of water by pesticides and nutrients; supporting biological and mechanical pest control (in place of chemical methods) and promoting agricultural/genetic biodiversity conservation through support for rare, indigenous breeds of plants and livestock. As regards AEM 6 - Measure for the integration and maintenance of autochthonous Maltese species - the aim is to promote the protection, maintenance and enhancement of the autochthonous Maltese farm species. Its specific objectives are to encourage an increased level of awareness and responsibility amongst those farmers applying under this measure. This measure will aim at focusing on 3 species of livestock: the Maltese Ox, Maltese rabbit and the Maltese black chicken. In addition to the prior it will also provide support for Holm Oak/ Carob/ Mulberry.

Overall, the response to the agri-environmental measures (not limited to those dealing with genetic resources) has increased. In fact there are over 25% of the registered farmers who have an agri-environmental measure commitment, with the total area under agri-environmental payments being 2,052.6ha in 2012. Moreover all farmers who have a Less Favoured Area commitment and or receive support under the direct aid are obliged to observe the cross compliance rules. These farmers amount to over 6000 farmers.

The National Climate Change Adaptation Strategy includes the action: *The Department of Agriculture will work with appropriate stakeholders to study and recommend how local breeds and crop varieties together with new species and hybrids could play an important role in agricultural adaptation.*

The EAFRD project "The Study and Sustainable Conservation of Varieties of Plants" is an initiative of the Plant Health Directorate. The targets are the following:

- An increase in the importance and awareness of fruit sectors;
- An increase in the efficiency of the local nursery sector to satisfy the high demand for plant propagation material, in terms of quantity and quality;
- The control of the incessant introduction from abroad of new varieties, which are gradually substituting the local germplasm;
- Intervention for the safeguard of the local fruit producing plant's germplasm through its conservation and, where necessary, its enhancement by clonal selection programs and utilisation through certification programmes;

Minimisation of risks relating to the introduction of dangerous quarantine pests in the Maltese Islands.

GR2	**NBSAP Measure**: The genetic diversity of endemic species, particularly those characterised by small and isolated populations, is safeguarded against risks of natural disasters and climate change. This is mainly achieved via the maintenance of a gene/seed bank, and any other *ex situ* measures, in support of *in situ* conservation (see BI3).	**Progress:** 😐

National Actions and Outcomes Achieved: *Ex situ* collections include those held by the Natural History Museum, the Argotti Botanical Gardens and the University of Malta for the purposes of inventorying, conservation and research. The University of Malta collection includes genetic samples that have been acquired either from stranded marine specimens or from terrestrial animals which have died of natural causes. Specimens held include cetaceans, turtles, *Gibbula nivosa*, *Tarentola mauritanica* and *Suncus etruscus*. Malta's National Environment Policy includes a seed bank conservation and awareness-raising project. The logistics and administrative issues for implementing this project are being discussed internally and with interested entities.

GR3	**NBSAP Measure**: Domestic legal provisions on access to genetic resources and benefit sharing (ABS) are strengthened via a national framework, which sets out the administrative, procedural and policy requirements to provide legal certainty and transparency to providers and users of genetic resources, based on prior informed consent (PIC) and mutually agreed terms (MAT).	**Progress:** 😐
National Actions and Outcomes Achieved: The ABS requirements of Article 15 of the CBD are incorporated into Legal Notice 160 of 2002 and transposed in Legal Notice 311 of 2006, as amended. A permit application for requesting prior informed consent for access to Malta's natural genetic resources within the scope of Article 15 is available online. Presently, national preparations are underway in order to be in a position to implement the access pillar of Nagoya Protocol at a national level. The compliance pillar will be implemented through the EU Regulation No. 511/2014 on compliance measures for users resulting from the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in the Union. The implementing legislation to address provisions of the EU Regulation that are of Member State competence is also being drafted.		

Theme 2: Species and Habitats (Code - SH)

SH1	**NBSAP Measure**: The integrity, structure and functioning of important ecosystems is maintained and, where required, restored, thereby securing the continued flow of ecosystem goods and services. This is done by mapping and assessing the state of ecosystems and their services in the Maltese territory.	**Progress:** ☹
National Actions and Outcomes Achieved: The EU Biodiversity Strategy requires Member States, with the assistance of the Commission, to map and assess the state of ecosystems and their services in their national territory by 2014 (part of Action 5). The timeline for implementing/achieving this NBSAP measure is set at 2015-2017 in view of the considerable work that is required. Existing and ongoing data gathering projects will contribute towards a detailed assessment of ecosystems. Malta also attends the meetings of the EU working group on mapping and assessment of ecosystem services that was set up to assist MS to implement Action 5 of the EU Biodiversity Strategy to 2020. The Social and Economic Analysis carried out within the framework of the MSFD provides a baseline with respect to the costs of degradation as a result of anthropogenic impacts on the marine environment. However, this analysis could not utilise the ecosystem services approach in view of currently limited information on the matter. An EU Horizon 2020 project related to the mapping of ecosystem services is underway with the participation of the Institute of Applied Science at MCAST. Such project shall positively contribute to this NBSAP Measure.		

SH2	**NBSAP Measure**: Species and Habitats of European Community and National Importance are maintained across their natural range via the	**Progress:** 😐

	implementation of adequate conservation measures (see SH3, SH4 and SH5), which support the existing legal protection regime. Maintenance or improvement in the status of Maltese species and habitats of European Community Importance, when compared to current assessments, is achieved by 2020, in so far as feasible.	

National Actions and Outcomes Achieved: While noting that maintenance or improvement in the status of Maltese species and habitats of European Community Importance, when compared to current assessments, is to be achieved by 2020, and hence will be reported at a later stage, ongoing initiatives are worth mentioning. Species and Habitats of European Community and National Importance (which also include species protected in line with relevant Multilateral Environmental Agreements) are afforded protection via Legal Notice 311 of 2006, as amended and via LN 79 of 2006, as amended, which respectively transpose amongst others, the EC Habitats and Birds Directives. The latter Directives are also currently subject to a fitness check exercise within the framework of the Commission's REFIT programme[94]. Marine mammals are also protected via the Marine Mammals Protection Regulations, 2003 (Legal Notice 203 of 2003).

The list of terrestrial species of Community importance found in Malta has been extended since the first assessment carried out in 2007 to two more species, these being pipistrelles - *Pipistrellus pipistrellus* and *Hypsugo savii* – two bat species which have recently been confirmed from Malta. Additionally, through new data, another bat species which was previously considered occasional is most probably found as a resident in small numbers, while being a migrant species; further information would be required to confirm this or otherwise.

When comparing the assessments of 2007 with those of 2013, overall there is an increase of 20% of species being in a favourable conservation status, from 20 to 40%, when considering all of the species reported on. However, one should note that such positive increase is not necessarily a result of genuine changes in the status, but mostly due to more accurate data or due to the use of different thresholds. Indeed, an audit trail regarding the changes that took place between one reporting interim and the other has been considered. Out of 52 species (excludes occasional species) 23 a favourable or a genuinely improved conservation status (i.e. 44%); 5 of these are marine species. One can mention that, two terrestrial species have seen a positive genuine change from one interim to another (i.e. between the 2007 assessment and the 2013 assessment), and their status is considered to be improving over the second interim (i.e. within the interim 2007-2013 per se). These are *Brachytrupes megacephalus* and *Pseudoseriscius cameroni*. The status of *Pinna nobilis* has then been noted to be deteriorating through the second reporting interim, in view of its population and future prospects. More detailed information is provided in Sub-section 1.3.1 of Malta's CBD 5NR.

The list of habitats of Community importance found in Malta comprises 26 terrestrial habitats and 4 marine habitats. When considering terrestrial habitats for the periods 2007 and 2013, there is an improvement in conservation status, with 9 habitats having a favourable conservation status as opposed to 1 habitat in the previous assessment, and 17 habitats having an unfavourable (inadequate or bad) status as opposed to the 20 habitats in the previous assessment. A trail for nature of change was considered, which indicates that there was an actual genuine change only for one habitat; this was from unfavourable-inadequate-improving to unfavourable-inadequate-stable – which is hence not a major change. On the other hand, the tree-related habitat referred to as Southern riparian galleries and thickets (*Nerio-Tamaricetea*) has been assessed as having an unfavourable-inadequate-deteriorating status for the last reporting interim, which is considered to have been the same status in the previous interim; this is in view of the structure and functions of this habitat type and its future prospects. It is positive to note that all marine habitat types have now been assessed, and all have been defined as having a favourable conservation status. More detailed information is provided in Sub-section 1.3.4 of Malta's 5NR.

Projects such as that on LIFE+ Malta Seabirds (2011-2016), which is led by BirdLife Malta, through

[94] http://ec.europa.eu/smart-regulation/refit/index_en.htm

the identification of sites important for birds of conservation importance, such as in this case Yelkouan shearwater, the Scopoli's shearwater and European storm petrel, which are all listed in Annex 1 of the Birds Directive, shall contribute to ensuring that appropriate safeguards are put in place to protect the habitats of these species.

SH3	**NBSAP Measure**: Opportunities for species reintroduction or reinforcement are explored and adopted, where feasible and where deemed of added value. Such endeavours should be designed following guidance issued by the IUCN and, should also be supported by secured resources and stakeholder engagement (links with SH2).	**Progress:** 😐

National Actions and Outcomes Achieved: In March 2013, MEPA adopted 'Guidelines on Managing Non-Native Plant Invaders and restoring Native Plant communities in terrestrial settings in the Maltese Islands' – available from: http://www.mepa.org.mt/file.aspx?f=9658. A component of these Guidelines addresses what considerations to make when planning and implementing native species reintroduction or reinforcement programmes aimed at restoring plant communities. This guidance document integrates the guidelines on undertaking conservation translocations as adopted by the International Union for Conservation of Nature (IUCN) at the end of 2012.

There is an ongoing project to re-introduce the Barn Owl, which is spearheaded by the Hunters' Federation (FKNK) and supported by the Wild Birds Regulation Unit. BirdLife Malta is in turn currently researching the possibility of reintroducing/reinforcing populations of Peregrine falcon into urban areas in Malta. A bird rehabilitation programme is in place, comprising two veterinarians, who with support from assistants, treat and operate all birds requiring attention that are presented. The Animal Welfare ambulance group has been added to the system of the pick-up of birds and all birds under rehabilitation are held at a station in Luqa that is managed by the Veterinary Regulation Directorate. There is an ongoing reform of the procedure concerning treatment and rehabilitation of injured birds and a process has been initiated to transfer Tal-Bosk farmhouse to BirdLife Malta for the purpose of management as a rehabilitation centre for birds.

The local NGO Nature Trust Malta handles injured protected reptiles (such as snakes) and mammals (mostly hedgehogs). They have nature permits issued by MEPA and regularly report to the latter competent authority. Nature Trust Malta also includes a Marine Rescue Team Unit that is involved in assisting injured or stranded marine animals[95]. Injured sea turtles are rehabilitated at the Turtle Rehabilitation Unit in Fort San Lucjan, which houses the Malta Aquaculture Research Centre (MARC).

SH4	**NBSAP Measure**: Priority species, especially endemic species, and rare specialised habitats, are covered by species and habitat action plans, respectively. These plans of action should recommend tailored conservation measures and where required, management/restoration (links with SH2 and SH3).	**Progress:** 😐

National Actions and Outcomes Achieved: The draft Dossier on the Exploitation of Wild Fauna in the Maltese Islands (covering the species mentioned in Legal Notice 311 of 2006, as amended) was adopted for external consultation. It has undergone further revision also following suggested changes by local experts. It is pending finalisation with a view to adoption in two parts – one on terrestrial fauna and one on marine fauna noting the different requirements of the terrestrial and marine realms. The Dossier ultimately puts forward tailored species conservation measures for a selection of terrestrial and marine taxonomic groups.

In connection with a loggerhead turtle nesting event which happened in June of 2012, various initiatives were carried out including the relocation of the nest, issuance of an emergency conservation order, cordoning the site, 24-hour surveillance and the issuance of public guidelines for marine encounters, as well as various informative material (including notices issues by fisheries

[95] http://www.naturetrustmalta.org/what-we-do/marine-rescue-team/

and fishing cooperatives, on site signage, FAQs on turtles and their nesting and a notice to mariners just to mention a few)[96].

No specific habitat action plans have yet been drawn up nevertheless measures for the safeguard of key habitats (as well as priority species, including endemic ones) are included in management plans for protected areas and also addressed in the implementation of the WFD and MSFD. In relation to the latter, Malta has completed its initial assessment which also covers water column habitats and benthic habitats in the marine environment as well as important species like seabirds, cetaceans and turtles. An interpretation manual for marine habitats within the 25NM fisheries management zone around the Republic of Malta was drawn up as part of the MedPAN North Project. Moreover, species policy invariably also covers habitat conservations considerations that are important for the survival of that particular species.

SH5	**NBSAP Measure**: A strict protection regime is in place, in line with requirements of the EC Nature Directives, and which incorporates measures to address the illegal and the incidental capture and killing of protected species, including those that are migratory (links with SH2).	**Progress:** 😐

National Actions and Outcomes Achieved: The draft Dossier on the Exploitation of Wild Fauna in the Maltese Islands (also mentioned in NBSAP Measure SH4) is intended to strengthen the strict protection legal regime in line with the requirements of the EC Habitats Directive.

In terms of incidental capture or by-catch, it should be noted that discards in Maltese fisheries are generally not significant mainly as a result of quotas being used up. Data on discards is currently collected for bottom otter trawlers targeting demersal species and for drifting longlines targeting large pelagic fish. The amount of discards generated by set longline fishery is negligible, so no discard information is collected for this fishery. Discards generated by the bottom otter trawl fishery mainly constitute commercial species, which were either below marketable size or too damaged to be sold. Such species include the crustacea *Aristaeomorpha foliacea*, *Parapenaeus longirostris* and *Nephrops norvegicus*, and the fish *Merluccius merluccius*. Percentage of discards of these species from the total catches in 2009 ranged between 3.1-9.6%. Other species discarded by bottom otter trawls in 2009 include in order of decreasing importance *Galeus melastomus*, *Etmopterus spinax*, *Scyliorhinus canicula*, *Raja clavata*, *Dipturus oxyrinchus*, *Leucoraja melitensis*, *Dalathias licha*, Raja *montagui*, *Torpedo marmorata*, *Chimaera monstrosa*, *Leucoraja circularis* and *Torpedo nobiliana*. Discards generated by longlines are mainly non-commercial species, with discards of commercial species being negligible. The majority of the non-target by-catch of tuna longline fishery constitutes specimens of *Caretta caretta*, which in most cases are released in accordance with current legislation and are only landed for rehabilitation purposes. Incidental capture of marine turtles is in fact considered to be a major threat to this functional group in Malta. The actual extent of the impact of incidental capture on marine turtles needs to be further studied. Data will be available once the new electronic logbook for vessels >12m is in place. (Source – MSFD Initial Assessment Report on Extraction of Fish).

As part of the completed EU Life Yelkouan Shearwater Project, studies were carried out to investigate the magnitude of seabird by-catch by Maltese bottom and surface longliners. Such assessments were carried out through questionnaire-based surveys directed to fishers, onboard observations by scientists and self-sampling by fisheries. From the studies carried out so far, by-catch does not seem to be of concern for the Yelkouan shearwater, which may due to a number of mitigating factors, such as the night setting, the side setting, the weight of the snood and the bait, which has been defrosted. The final report was published in June 2010[97]. Malta submitted a detailed report on the implementation of EU management plans for huntable species in September 2013. The amendment of the Wild Birds Conservation Regulations of 2006 via LN 341 of 2013 effectively doubled existing penalties for illegal killing and capture of wild birds. Enforcement presence has also

[96] http://www.mepa.org.mt/species-turtlenest
[97] http://www.lifeshearwaterproject.org.mt/uploads/items/158.pdf

doubled in the field during spring and autumn hunting seasons. Regulation 6(c) of the "Framework for allowing a derogation opening an autumn live-capturing season for Song Thrush and Golden Plover Regulations, 2012" (Legal Notice 303 of 2012, as amended) necessitates that accidentally captured birds are to be immediately released by the licensee.

SH6	**NBSAP Measure**: Guidelines on habitat management and restoration are adopted and provide information on best practices for managing the different terrestrial and aquatic habitat types in Malta bearing in mind guidelines established by multilateral environmental agreements (MEAs), such as the Ramsar Convention in the case of wetlands.	**Progress:** NA

National Actions and Outcomes Achieved: The preparation and adoption of these guidelines is intended between 2015 and 2017 and hence progress will be reported at a later stage (2017 NBSAP review). Site-specific guidance on habitat management and restoration is however addressed through the management process of terrestrial Natura 2000 sites. Work on Malta's prioritised restoration framework is currently based on the restoration targets set by Natura 2000 sites' management plans.

SH7	**NBSAP Measure**: Urban biodiversity in villages and towns is safeguarded through the uptake of community initiatives, such as green rooftops, green open spaces, and other incentives, such as competitions for the best gardens and open spaces in urban areas, which promote the use of indigenous species (as opposed to invasive non-native plants). Such initiatives contribute to an increase in green urban areas.	**Progress:** 😐

National Actions and Outcomes Achieved: The promotion of the protection, upgrading and creation of additional public open space, through spatial and transport planning, and the work of Local Councils is identified as an action under the NEP.

"Greening the Community Initiative" was launched on 16 May 2014 by the Environment Minister. This is a government pilot project that shall allocate funds to four localities with the aim of providing larger green spaces and hence raise the quality of life for both the residents of these localities, as well as for visitors. The localities to benefit from this initiative are Fgura, Msida and St Paul's Bay in Malta, and Victoria in Gozo. Each will be granted €50,000 in funds. If the pilot project will be successful implementation on a nation-wide scale will be explored.

The proposed SPED includes Urban Objective 3: To identify, protect and enhance the character and amenity of distinct urban areas by *inter alia* protecting and green open spaces, reducing soil sealing and supporting biodiversity with a view of developing ecological corridors.

The University of Malta is participating in the LifeMedGreenRoof project (LIFE12 ENV/MT/000732; project duration: 01-JUL-2013 to 31-JUL-2017). This will construct two demonstration green roofs as case-studies: one on the University of Malta's Faculty for the Built Environment campus building. The roof will demonstrate the benefits of green roofs for meeting environmental and biodiversity targets. The project will also show that green roof technology is safe and cost-efficient, reducing energy consumption thanks to the insulation properties of the system. The project expects *inter alia* to achieve the following results: Identification of local materials adequate as growing media; Identification of suitable native plants; Creation of two demonstration green roofs; Publication of data on insulation properties; Publication of data on storm-water management; and Drafting of proposed policies for the Maltese planning system.

The forthcoming "Swift project" coordinated by Falko, BirdLife Malta's youth section, will aim to evaluate Malta's urban swift population and communicate more about the ecology of these birds to Malta's public, through participation in the collection of data and a wider communication strategy (hence contributing also to the NBSAP Measure PC1).

SH8 → **SH8**	**NBSAP Measure**: The "2002 Guidelines on Trees, Shrubs and Plants for Planting and Landscaping in the Maltese Islands" are updated to include guidance on context sensitive landscaping and planting, and to establish new standards on the basis of experience gained over the past years since their publication.	**Progress:** ☹
National Actions and Outcomes Achieved: In order to promote the application of GPP in Malta, the government has adopted a GPP National Action Plan[98]. The Plan establishes GPP targets for 18 product and service groups and proposes a series of measures for their attainment. One product and service group is that on "Gardening Products and Services". This product group covers procurement activities for the maintenance of green public areas: the gardening products, machinery and services for the maintenance of public green areas (hence also relevant to NBSAP Measure SH7 above). Criteria for the direct procurement of the main products/elements used in garden maintenance address *inter alia* plant species. The national GPP guidelines on this product and service group are available from: https://secure2.gov.mt/tsdu//file.aspx?f=7839. With respect to ornamental plants and trees, the selection of species needs to be in line with the "2002 Guidelines on Trees, Shrubs and Plants for planting and landscaping in the Maltese Islands" or any other subsequent updated version. The "2002 Guidelines on Trees, Shrubs and Plants for Planting and Landscaping in the Maltese Islands" requires review to address any shortcomings of the document as well as address current needs in the landscaping context such as with respect to promoting context-adapted planting in view that requirements would differ from site to site. The timeline to do this has been extended. This NBSAP Measure SH8 will be combined with CB3.		

Theme 3: Ecological Network of Protected Areas (Code - EN)

EN1	**NBSAP Measure**: Efforts are continued to ensure that Malta's National Ecological Network constitutes a comprehensive and ecologically representative national system of protected areas, with improved sufficiency in affording protection to Maltese habitats and species.	**Progress:** ☺
National Actions and Outcomes Achieved: Efforts have continued in line with this NBSAP Measure through the designation of additional marine protected areas, not to mention the three related LIFE+ projects which are expected to lead to the designation of further marine Natura 2000 sites, namely LIFE+ Seabirds (on marine IBAs and SPAs), LIFE+ Migrate (on marine SCIs for the loggerhead turtle and the bottlenose dolphin) and LIFE+ BAHAR (on marine SCIs for marine habitat types). For more information see section 2.4 of the CBD 5NR.		

EN2	**NBSAP Measure**: Conservation objectives and management plans are defined (by 2014 for terrestrial areas*) and implemented in a timely manner for Natura 2000 sites, which are also supported by sectoral policies and planning instruments that allow a fully integrated ecosystem approach. *In the case of marine sites the timeline will be after 6 years from designation as SCIs through listing in a Commission Decision.	**Progress:** ☺
National Actions and Outcomes Achieved: The management planning process for all terrestrial Natura 2000 sites of the Maltese Islands has been completed through the EARDF funded project, which resulted in the preparation of a compliment of 22 draft management plans and 8 draft conservation orders. The latter are specific legal instruments setting up the objectives and measures for Natura 2000 sites which do not require management plans due to their small size. Important Bird Areas (IBAs) on land identified by BirdLife Malta are currently protected as Nature		

[98] https://secure2.gov.mt/tsdu/gpp?l=1

Reserves, Bird Sanctuaries, Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Tree Protection Areas (TPAs), Areas of Ecological Importance (AEIs) and/or Sites of Scientific Importance (SSIs) through different subsidiary legislation of the Environment and Development Planning Act. Similarly, the Wetlands of International Importance designated under the Ramsar Convention (namely L-Għadira and is-Simar, which are also SACs, SPAs and bird sanctuaries) are both managed on the basis of a management agreement with BirdLife Malta.

Through the adoption of national legislation, Malta ensures that the development process provides for the integration of Natura 2000 considerations into the preparation and adoption of plans and policies by ensuring that a strategic environment assessment is carried out on plans and policies with a potential significant impact on the environment and by requiring an appropriate assessment on the implications on the Natura 2000 site of an operation or activity, which are not necessary for the management of the site in view of the site's conservation objectives.

Malta's Rural Development Programme promotes multifunctional agriculture within a wider framework of integrated rural development so as to achieve the sustainable development of rural areas in Malta. The three main objectives of the programme for 2007- 2013 were enhancing the economic viability through investment and modernisation; preserving the rural environment and the countryside; and supporting the wider rural economy and quality of life in rural areas. Work is done to ensure that any measures proposed and implemented within the RDP framework are in line with the conservation objectives of NATURA 2000 sites.

The proposed SPED recognises the need to safeguard protected areas, strengthening the links within the ecological network and enabling activities aimed at enhancing management objectives under Thematic objective 8.

EN3	**NBSAP Measure**: The capacity of linear features in the landscape (such as dry stone walls, watercourses, field margins, vegetated road verges) to serve as ecological corridors between fragmented areas and protected areas and for maintaining their vital role as important microhabitats for wild species and their dispersal, is maintained, more so in the face of climate change.	**Progress:** 😐

National Actions and Outcomes Achieved: Dry stone walls (otherwise known as rubble walls) in Malta serve as an important ecological corridor and a refuge for a number of endangered terrestrial fauna. With a view of conserving and maintaining these structures, noting their architectural and environmental importance, the "Rubble Walls and Rural Structures (Conservation and Maintenance) Regulations (LN 160 of 1997, as amended)" were enacted. Government also invests in the craft of rubble wall building in order to conserve the knowledge of this craft, as well as to restore and conserve such traditional landscape boundary walls.

The restoration of rubble walls is recognised as a management measure for protected species, particularly reptiles (Article 12 of the Habitats Directive), the need to ensure coherence in Natura 2000 sites (Article 10 of the Habitats Directive), but also to reduce soil loss and erosion, water loss and to reduce desertification and land degradation. A total of 250 metres run of rubble walls at Manikata, Xagħra l-Ħamra and at Għargħur were reinstated during 2010 (Source – Annual Government Report, 2010). The ongoing Life Saving Buskett Project expects as one of its project deliverables the reparation/restoration/rebuilding of dry stone ashlar walls.

The draft consultation document "Outside Development Zones Policy and Design Guidance" proposes policies on rubble walls and land demarcations. The consultation document is available at: http://www.mepa.org.mt/odz-policy

The conservation of important valley watercourses, another type of ecological corridor, is being addressed via the implementation of the Habitats Directive and through the scheduling of valley systems around Malta and Gozo thereby contributing toward their protection as natural hydrological pathways. Indeed the protection of these valley environments enhances them as important hydrological and natural water retention pathways contributing significantly to storm water management. To date, measures to protect watercourses at the catchment scale is limited to

integration of WFD objectives in the planning control process and Environmental Impact Assessment process.

EN4	**NBSAP Measure**: Components for building a green infrastructure (as a holistic framework for resource planning and conservation) are strengthened to improve the ecological coherence of Natura 2000, via integration into the broader landscape, and hence to curb habitat fragmentation, improve adaptation to climate change and aid in integrated flood management (links with EN2 and EN3).	**Progress:** 😐

National Actions and Outcomes Achieved: Response on EN3 is also relevant here.

It is acknowledged that due to the inherent land constraints in Malta and population density, certain GI option/elements might not be feasible for deployment in the country whilst however bearing in mind that even small scale GI elements can bring ecological and social benefits if applied correctly and when considering them in conjunction at the landscape scale.

Principles of connectivity through a green infrastructure are already adopted in Malta. For instance, connectivity is achieved in relation to the fact that the boundaries of certain protected areas overlap and protected areas are also accompanied by buffer zones.

Concepts related to green infrastructure are also found in the Malta's national planning framework. These include networks of countryside walkways identified in the Structure Plan for the Maltese Islands and the scheduling of environmentally sensitive areas and the designation of 'green gaps' between urban areas located in close proximity found in Local Plans.

One ongoing initiative is the involvement of the Għajnsielem Municipality as one of the Partners of the Interreg IVC Co-financed Green Infranet Project, which aims to promote the development and implementation of green infrastructure by exchanging experience and expertise, and by identifying, analysing and transferring good practice related to green infrastructure policies. Project activities in relation to these areas will form the basis of the Green Infrastructure Action Toolkit, intended for wider dissemination, and will also lead to the establishment of the European Green Infrastructure Knowledge Network[99].

New initiatives would need to explore opportunities at greening grey infrastructure such as through green roofs (see current project documented under NBSAP Measure SH7) and green walls. Other initiatives could look at strategic restoration of degraded areas and promoting the multi-functionality of areas that enhance better active lifestyles, which are connected with nature.

In the Commission's Proposals for the Cohesion Fund and the European Regional Development fund (ERDF), Green Infrastructure is specifically identified as one of the investment priorities. In its recommendations for Malta, the Commission explicitly proposed that to support the shift towards a low-carbon economy in all sectors, Malta shall develop ecosystem-based approaches to conserve and enhance natural carbon sequestration including *rural and urban green infrastructure*.

GI proposals in the context of the Rural Development Programme for 2014-2020 will focus on several key areas ranging from water scarcity and conservation issues, climate change mitigation and adaptation whilst promoting resource efficiency and supporting the shift towards a low carbon economy. Amongst other things the Government intends to continue its support for restoration of traditional landscapes and features such as rainwater capture, rehabilitation of terraces, rubble walls, etc. Funding will also be aimed at promoting protection and management of natural environment and habitat (for example, management of garigue, preventing soil erosion, protecting trees/woodland, water management infrastructure). Climate mitigation through improved soil management, reduction in fossil fuel consumption, integrated pest management to reduce pesticide usage is also targeted.

EN5	**NBSAP Measure**: A zoning system (which in the case of terrestrial areas builds on adapted principles of the scheduling process) is in place for	**Progress:**

[99] http://www.greeninfranet.org/index.php?page=about-the-project

	protected areas and applies temporal and spatial restrictions so as to direct anthropogenic pressures away from particularly sensitive habitats and species, or away from particularly sensitive periods of the year (links with EN2).	NA
National Actions and Outcomes Achieved: The implementation of the zoning system is intended between 2018 and 2020 and hence progress will be reported at a later stage (2020 NBSAP review).		

EN6	**NBSAP Measure**: A range of governance types for long term management of protected areas is in place, based on good governance principles.	**Progress:** 😐
National Actions and Outcomes Achieved: Various governance types for the management of protected areas are in place, and it is expected that with the formal adoption of the management plans for protected areas, the range of governance types for long term management of protected areas is explored. This matter is also being considered in the structuring of the planned Environment and Resources Authority, aimed to be set up in 2015.		

EN7	**NBSAP Measure**: Standards, criteria and indicators are established to evaluate the effectiveness of protected area management.	**Progress:** NA
National Actions and Outcomes Achieved: The preparation and adoption of such standards is intended between 2015 and 2017 and hence progress will be reported at a later stage (2017 NBSAP review). It is noteworthy that through the MedPAN North Project, the project partners aimed to come up with common approaches to meet international, European, and national commitments in terms of MPAs networks and to improve the management efficiency of MPAs.		

Theme 4: Biological Introductions (Code - BI)

BI1	**NBSAP Measure**: A national information and early warning system (e.g. species black list + existing border controls and permitting procedures) is in place to prevent the introduction and spread of invasive non-native species via priority pathways. Accidental introductions are addressed by way of contingency planning thereby avoiding/minimising any socio-economic and environmental impacts.	**Progress:** 😐
National Actions and Outcomes Achieved: Malta currently adopts border inspection posts as required by relevant EU policy, as well as applies permitting procedures for importation from third countries and transport, as required. Release of species into the environment is also controlled. The CITES Management Authority (MEPA), processes CITES applications and endorses Import Licences and Customs entry forms, and any new species encountered, particularly live specimens, are usually referred to the Scientific Authority for an assessment of the risk they have in establishing an alien invasive population. To accomplish such an assessment, the latter Authority has designed a template to assist species risk assessments in connection with trade. The template is available from: http://www.mepa.org.mt/file.aspx?f=5833. Species, which in the opinion of the Scientific Authority are deemed to be potential alien invasive species, are black-listed and added to a database which is continuously updated. EU restrictions apply to species included in Annex B to Council Regulation (EC) No 338/97, and their import into the Union is prohibited because their invasive character has been recognised and their introduction into the Union has an adverse impact on native species. Those species are: *Callosciurus erythraeus, Sciurus carolinensis, Oxyura jamaicensis, Lithobates (Rana) catesbeianus, Sciurus niger, Chrysemys picta, Trachemys scripta elegans*. The EU Regulation No. 1143/2014 of the European Parliament and of the Council on the Prevention and Management of the Introduction and Spread on Invasive Alien Species requires restrictions to be applied to IAS listed as of EU concern combined with *inter alia* the use of official controls at borders at member		

state level plus the establishment of a permitting system allowing establishments to carry out research or *ex situ* conservation on invasive alien species under defined strict conditions. This Regulation is binding to all Member States, including Malta as from 1 January 2015. The implementing legislation to address those provisions of Member States competence is being drafted.

Continued screening is also carried out on all species imported through the screening of Trade import licences in order to weed out possible alien species from being imported.

Any non-compliant imports of plants and plant material are notified to the EU by using the Europhyt Database[100]. This database is accessible to all national plant protection organisations and to the country of Export depending on the imports. This notification database is also used to notify any non-compliance related to the movement of plant and plant products from other Member States. Other means of notification especially about the presence of harmful organisms are also made to the EU Commission in accordance with Article 16 of Council Directive 2000/29.

Traceability and tracking have always been considered as being a crucial point by which harmful organisms and non-compliances are reported. The Traces (Trade Control and Expert System) database is used to record all the movement and imports of animal and food of non animal origin[101]. This database is now also being considered to start inputting all the imports of plants and plant material into the EU in order to have records of any imported material in accordance to the new EU Law on "Official controls" as referred to in COM 265 2013.

BI2	**NBSAP Measure**: A systematic and coherent national strategy on invasive non-native species is in place by 2015 and is based on the CBD's three-stage hierarchical approach, which includes prevention, early detection of the species, and rapid action by eradication, containment and control (where feasible). This strategy is supported by other policy guidance on the removal of invasive species.	**Progress:** 😐

National Actions and Outcomes Achieved: A similar measure is adopted by Malta's National Climate Change Adaptation Strategy (action 20) that states "Malta will adopt a national strategy and appropriate contingency plans to deal with the threat posed by alien and invasive species, which could also have significant health and economic implications and beef up its border customs, veterinary, and phytosanitary controls with third countries." The adoption of the national strategy is expected in 2015 hence progress will be reported at a later stage (2017 NBSAP review). However at this stage, it is recognised that this NBSAP measure would require alignment with the requirements of the EU Regulation of the European Parliament and of the Council on the Prevention and Management of the Introduction and Spread on Invasive Alien Species. Malta also implements the European Strategy on IAS as adopted under the Bern Convention Framework. Implementing measures are regularly reported to the Bern Convention Secretariat in the run up to meetings of the Expert Group on IAS which Malta attends. Malta also hosted the ninth meeting of this Group in 2010. The guidance component of this NBSAP measure has been partly addressed vis-à-vis plant invaders through the adoption by MEPA of the "Guidelines on Managing Major Plant Invaders and Restoring Native Plant Communities within Terrestrial Settings in the Maltese Islands" in March 2013. The Guidelines have been drawn up to: (1) assist the planning and implementation of management programmes, aimed at counteracting the spread of existing plant invaders; and (2) assist the design and implementation of native plant reintroductions or reinforcements, aimed at reinstating native plant communities to a favourable conservation status. The document also serves as guidance to be followed when drawing up method statements on the removal of invasive plants and hence is also relevant to the NBSAP measure BI3. Ultimately, the Guidelines have been developed with the aim of ensuring that best practices are followed in line with requirements of biodiversity-related Multilateral Environmental Agreements and other guidance documented in both

[100] http://ec.europa.eu/idabc/en/document/2267/5926.html
[101] http://europa.eu/legislation_summaries/food_safety/veterinary_checks_and_food_hygiene/f84009_en.htm

fields.

BI3	**NBSAP Measure**: Endemic species and areas of conservation value at risk by invasive species are identified, and prioritised for targeted, well-planned, ecologically and financially feasible remedial action, with the goal of reinstating self-sustaining native communities and healthy ecosystems.	**Progress:** 😐

National Actions and Outcomes Achieved: Eradication or control activities are currently identified on an *ad hoc* basis, and are focussed on priority cases. Activities are undertaken following specific method statements that are drawn up on a case-by-case basis as the need arises. In the case of protected areas already covered by a management agreement, site managers undertake activities that aim to curtail the spread of, and eradicate, invasive species. All such efforts are combined with monitoring to assess progress and effectiveness of the measures adopted. In this regard, site-specific control or eradication measures are also addressed by the conservation measures adopted as part of the management planning for terrestrial protected areas. Existing initiatives include:

- L-Għadira vis-à-vis the control of *Acacia* spp., which is carried out on a yearly basis by the site managers; By the end of 2014 it is foreseen that in the region of 80% of alien tree cover will be removed over a period of four years; Removal of other pests is also carried out especially feral cats (given to animal sanctuaries) and rats;
- Ir-Ramla tat-Torri and Rdum tal-Madonna vis-à-vis rat eradication and removal of *Agave americana*;
- Wied Għollieqa vis-à-vis the removal of *Opuntia ficus-indica* and *Ricinus communis*;
- Għajn Tuffieħa vis-à-vis the removal of *Acacia* spp. and *Agave* spp.
- Ramla il-Ħamra vis-à-vis the control of *Arundo donax* on the sand dune.

Additional removal initiatives are being planned for earmarked locations (e.g. Majjistral Park, Buskett and Girgenti) and the best way forward, including method statements, are under discussion with relevant entities.

The PARK and Initiatives Directorate aims to control and eradicate invasive alien species from all sites managed by PARK, including Ta' Qali National Park, Salina Park, Xrobb l-Għaġin Park, Buskett Woodland and Marsaskala Family Park. Invasive alien species such as *Pennisetum* grass, *Carpobrotus edulis*, *Ailanthus altissima* and *Ricinus communis*, which may germinate spontaneously in these sites, are regularly uprooted and destroyed to eliminate any risk of colonisation of new areas.

Phytosanitary implementation measures are ongoing. These include:

- obligatory surveys within the Maltese territory by the Plant Health Directorate;
- inspections and surveys in Natura 2000 sites, public areas, public gardens, border inspections posts, on consignments, nurseries, agricultural land, warehouses in accordance to Council Directive 2000/29 and the Plant Health Quarantine Act;
- designing action and contingency plans, and Pest Risk Analysis for any quarantine pests found in the Maltese Islands;
- eradication measures for quarantine pests found in the Maltese territory;
- preventive measures, such as the installation of pheromone traps at the border inspection posts for the vector *Monochamus,* which can carry the quarantine pest – pine wood nematode;
- dissemination of information, like seminars, leaflets, radio, TV, website etc;
- use of solidarity funds from the EU – for instance with respect to the control of the red palm weevil; and
- trainings abroad of staff in relation to Better Training for Safer Foods (BTSF), European and Mediterranean Plant Protection Organisation (EPPO) workshops, COST and Diagnostic Procedures.

Expected changes are foreseen in the way surveys and inspections will be carried out on a risk basis approach and also on priority pests as deemed necessary by the MS, in view of negotiations of EU legislative policy on plant health, official controls, seeds and plant health material, and food and

feed expenditure. The new financial regulation will also help MS in order to implement any measures in relation to the control of pests and also on the financing of any surveys. The new regulation will also finance any expenditure in relation to the accreditation of the Plant Health Labs.
BirdLife Malta is planning to extend its current projects on Malta's seabirds focussing on the Yelkouan Shearwater and monitoring impacts on the species including potential eradication of rat populations.

BI4	**NBSAP Measure**: Key stakeholder groups, such as traders (pet shops, breeders and nurseries), as well as land and sea users cooperate to prevent the unwanted release/escape and spread of non-native and invasive species into the environment. To assist this, national codes of best practices are established in consultation with key stakeholders and adopted for those sectors that can aid the introduction and spread of invasive species. The drawing up of such codes builds on European Codes of Conduct as adopted under the Bern Convention.	**Progress:** ☹

National Actions and Outcomes Achieved: Work on drafting the national codes of conduct will be done in parallel with the development of the national strategy (BI2).
Presently, all those activity centres that are involved in the trading and propagating or who are engaged in any activity related to plant material are obliged to be registered under LN 97 of 2004. In this register (the Malta Official Register) the information related to the trading activity are kept. All those registered in the Malta Official Register are consulted on any national legislation, which may affect their activity. Dissemination of information is also conducted at national level to inform all those involved of any existing legislation.
The "Protection of Animals offered in Pet Shops (Minimum Standards) Regulations, 2014" (SL439.16) issued in July 2013 include the concept of contingency with regards to escapees and in cases of emergency. The existing zoo licences also include measures for control of escapees.

BI5	**NBSAP Measure**: Measures are in place to implement the recommendations made in the National Biosafety Framework, and by strengthening legislation describing rules and procedures to further safeguard the environment from potential damage resulting from genetically modified organisms (GMOs).	**Progress:** 😐

National Actions and Outcomes Achieved: In 2010, the following legislation was published as part of the Better Regulation Initiative.

- LN 485 of 2010 Environment Protection Act (Cap. 435) - Deliberate Release into the Environment of Genetically Modified Organisms Regulations, 2010. (http://www.mepa.org.mt/file.aspx?f=5399)
- LN 265 of 2010 Environment Protection Act (Cap. 435) Contained Use of Genetically Modified Micro-Organisms (Amendment) Regulations, 2010. (http://www.mepa.org.mt/file.aspx?f=4875)

A third legislation was drafted dealing with the national implementation of EC Regulation 1946/2003 on the transboundary movement of genetically modified organisms. The official controls regulation also takes into account the aspect of official controls with respect to GMOs.
The NEP expresses non-support for the introduction of GMOs, particularly where the following risks exist: risk of damage to Maltese ecosystems, particularly in view of the risk to small island ecosystems; risk of damage to Maltese commercial crops where the risk of cross-hybridisation exists; risk to future cultivation of non-GM varieties that are of high commercial value or have the potential to be grown under systems of certified agriculture and in the case of GM food or feed, where risks to human health have been identified.

Theme 5: Sustainable Use of Biological Resources (Code - BR)

BR1	**NBSAP Measure**: A sustainable and diversified local source of native plant stock is available to cater for the increasing demand for native species of trees and shrubs for use in forestation, landscaping and planting for site stabilisation and restoration.	**Progress:** NA

National Actions and Outcomes Achieved: The implementation period for this measure is 2015 and 2017 and hence progress will be reported at a later stage (2017 NBSAP review). Of note however in the adopted green public procurement creation for ornamental plants in the category on Gardening Products and Services. Certain NGOs as well as the Argotti Botanical Garden, the Plant Health Directorate and PARKS Department maintain through propagation a native plant stock.

BR2	**NBSAP Measure**: Malta cooperates with the European Commission, EU Member States as well as Mediterranean Countries to maintain and restore fish stocks to levels that can produce maximum sustainable yield in line with the Common Fisheries Policy (CFP) and in support of the Marine Strategy Framework Directive (MSFD).	**Progress:** NA

National Actions and Outcomes Achieved: The implementation period for this measure is 2015 and 2017 and hence progress will be reported at a later stage (2017 NBSAP review). However it is to be noted that the CFP Reform entered into force on 1st January 2014. Multiannual Plans have been accepted by the EU for Lampara, Tartarun and Trawlers.

In the context of the MSFD, Malta carried out its initial assessment. The report on fish aims at fulfilling the requirements of this Directive in providing information on the structure of fish populations, including the abundance, distribution and age/structure of the populations. Data on fish populations is generated through the implementation of Malta's National Fisheries Data Collection Programme (NFDCP) in line with EU's Council Regulation 199/2008, establishing a Community framework for the collection, management and use of data for the purpose of forming a solid basis for scientific analyses of fisheries and of providing for the formulation of sound scientific advice for the implementation of the common fisheries policy and Commission Decision EC949/2008 adopting a multiannual Community programme pursuant to EC199/2008. The most relevant data for assessing fish populations is generated through the scientific surveys carried out as part of the Data Collection Framework namely the Mediterranean International bottom trawl survey (MEDITS) and the Pan-Mediterranean pelagic survey (MEDIAS). MEDITS surveys target benthic and demersal assemblages while MEDIAS targets small pelagics. The report is available from: https://www.mepa.org.mt/water-msfd

The NEP (Action 2.6.24) requires the preparation of policy frameworks for the fisheries sector to integrate biodiversity considerations into future directions for the sector by 2014. A draft Fisheries Strategy is currently under discussion.

BR3	**NBSAP Measure**: Plant-based products are derived from sources that are sustainably managed in line with EU obligations.	**Progress:** ☹

National Actions and Outcomes Achieved: A part of this ongoing NBSAP measure relates amongst others to the FLEGT Regulation, which regulates timber products. The Timber Control Unit within the Agricultural Directorate in the Ministry for Sustainable Development, the Environment and Climate Change is the nominated Competent Authority for the implementation of the Council Regulation (EC) No 2173/2005 on the establishment of a FLEGT licensing scheme for imports of timber into the European Community. This Regulation adopts a licensing scheme that is implemented through Partnership Agreements with timber producing countries. Detailed measures for the implementation of Council Regulation (EC) No 2173/2005 are detailed in the Commission

Regulation (EC) No 1024/2008.
BirdLife Malta evaluated the Government's responses for the 2014 EU Government Barometer on Illegal Logging and Trade survey. [102] The latter is a WWF assessment of EU member states' efforts to tackle illegal logging. According to the Country Score for Malta, the assessment documents an overall inadequate performance with steady decline in scoring since 2007 and falling again in 2014.
The FLEGT and timber control legislation is being drafted by the Competent Authority and should be in place by 2015.

BR4	**NBSAP Measure**: Exploitation of wildlife for trade is based on sustainable practices in line with CITES regulations and is supported by the continued provision of information on biodiversity trade and protection regulations by the CITES management authority to importers, exporters and other stakeholders. Where required, the provision of information is enhanced through the development and dissemination of guidance/awareness material, which contribute towards adequate implementation of national legislation on wildlife trade.	**Progress:** ☺

National Actions and Outcomes Achieved: The implementation of this NBSAP measure is successfully ongoing. In November-December 2010, a 3-day CITES Training Workshop, was held for the Management Authority, Customs, Police and Veterinary officers. This was an EU funded programme co-ordinated by TRAFFIC. In 2013 the national TV programme – Malta u lil hin Minnha – broadcasted an interview on the CITES procedures on the importation of CITES listed species as applied in Malta.
A guidance letter is issued for holders of an Article 10 certificate to explain use of certificate and marking and registration of offspring.
Written guidance has also been provided to importers explaining the requirements necessary to obtain a release at the CITES office. The aim was twofold:

- to provide an explanation to clients on the information required, and hence promote increased cooperation, and
- to provide the importers with official documentation, which would facilitate them in acquiring information from their suppliers. (For cosmetics a template was drafted to aid suppliers to provide the scientific names of the animal/plant extracts found in cosmetics).

Additional guidance is provided with respect to the carry out of a risk assessment using the form available on MEPA's website.

BR5	**NBSAP Measure**: The regulation of capture and killing of protected species builds on sustainability principles and is in line with provisions of national law and the EC Nature Directives. This is ensured via the better regulation initiative and also in the light of conservation status assessments.	**Progress:** 😐

National Actions and Outcomes Achieved: The "Flora, Fauna and Natural Habitats (Amendment) Regulations, 2013" transpose the latest Annexes of the EC Habitats Directive. With the aim of strengthening the strict protection regime afforded by the "Flora, Fauna and Natural Habitats Regulations, 2006, as amended", MEPA has also drafted a dossier on the capture, killing and exploitation of wild fauna in the Maltese Islands. This document addresses species of fauna (excluding birds) that are, or are likely to be, threatened by deliberate and/or incidental capture and killing, as well as animal species whose exploitation should be managed, with a particular focus on those species included in these regulation, which also transpose the Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora. The Dossier ultimately responds to

102 http://barometer.wwf.org.uk/what_we_do/government_barometer/scores_by_country/country_scores.cfm?country=Malta

mandates of biodiversity-related multilateral environmental agreements as well as related EU policy and, aims to assist Malta in building a strict protection regime, by devising strategic recommendations for each species or group of species addressed in the Dossier. The document is currently being finalised with a view to later adoption.

In the context of birds, the "Wild Birds Protection Regulations, 2006" (SL 504.71) have been strengthened via an amendment by LN 341 of 2013[103], which effectively doubles existing penalties for illegal killing and capture of wild birds. The special protection afforded to bird species referred to in Schedule I has now been extended to the following non-Schedule I species: *Cygnus olor* - Mute Swan; *Accipiter nisus* - Eurasian Sparrowhawk; *Buteo buteo* - Common Buzzard; *Falco subbuteo* - Eurasian Hobby; *Falco tinnunculus* - Common Kestrel; *Ardea cinerea* - Grey Heron; *Asio otus* - Long-eared Owl; *Otus scops* - European Scops Owl; *Tyto alba* - Barn Owl and *Morus bassanus* - Northern Gannet. Similar penalties that apply to Schedule I species also apply to these species as listed in Schedule IX and as per Regulation 27(2). LN 341 of 2013 was followed by another amendment, published on 28 March 2014 (LN110 of 2014), which increased the penalties for illegal shooting or taking of protected birds ten-fold. Thus, as from 28 March 2014, any person convicted of any targeting of protected species listed in Schedules I and IX of these Regulations, but excluding those listed as "huntable species" in Schedule II, even in the case of a first time offence, will automatically incur a penalty comprising of a fine of €5,000, and/or imprisonment for one year, as well as the permanent revocation of the hunting licence or ban from obtaining such licence, and confiscation of the *corpus delicti*. In the case of a second or subsequent offence, the applicable penalty will go up to €10,000, confiscation, and/or imprisonment for two years. The development of national strategy for the eradication of illegal killing, trapping and trade in wild birds has been initiated. To this effect, a working group, consisting of key stakeholders including MEPA, the police, the Wild Birds Regulation Unit, representatives of the hunting community as well as representatives of Birdlife (Malta) is being set up in order to draw up this strategy.

Theme 6: Sustainable Use of Natural Resources: Soil, Water and Land (Code - NR)

NR1	**NBSAP Measure**: High Nature Value Farmland (HNVF) in Malta is mapped according to defined criteria, and good agricultural and low-intensive practices, including organic farming, are applied to preserve such land and associated agrobiodiversity (links with SI2 and SI3).	**Progress:** 😐

National Actions and Outcomes Achieved: Agriculture land, which is fully converted to organic farming totals 32.1804Ha, while 4.81Ha are in the conversion period from conventional to organic farming. There are currently 12 organic agricultural producers, 4 processors and 2 Importers. Harvested production of organic products amount to 20.3456 tons.

The NEP requires (Action 2.2.30) the updating and implementation of the National Organic Farming Strategy by 2013 as well as (Action 2.5.1) encouraging through education the adoption of environmentally-beneficial practices in agriculture, leading towards the adoption of organic farming, by 2014. The Eco-Gozo action plan includes the setting up of a new Centre for RDI in Agriculture and the Environment which is currently being set up jointly with the University of Malta. The capital investment involved amounts to €1.2million (which does not include operational and recurrent cost). Research activity at the centre has already started; contact with the farming community is ongoing.

NR2	**NBSAP Measure**: Land uses are commensurate with the management of soil and by inference, water resources across the Maltese Islands. This is required in order to promote: the build-up of soil organic matter; the enhancement of soil biodiversity; the reduction (and reversal, where possible) of soil erosion, contamination and compaction; the minimisation	**Progress:** 😐

[103] Consolidated version (SL 504.71) is available from: http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=11548&l=1

	of salinization/sodification levels (where applicable); the mitigation of flood-induced soil mass displacement/ land sliding; and the increase in infiltration and moisture retention in the soil. Measures incorporated in a soil action plan are formulated to address these goals in terms of how to mitigate the threats to Maltese soils and adopt measures aimed at soil conservation. The soil action plan and other national relevant policies shall contribute towards the requirements of the Convention to Combat Desertification (UNCCD) to develop desertification national action programmes.	

National Actions and Outcomes Achieved: The 2014-2020 Rural Development Programme (RDP) will continue to promote soil conservation measures.

The proposed SPED includes the Thematic objective 7: To promote the efficient use of resources including local stone, water and soil by *inter alia*:

- ensuring phased extraction of minerals and restoration of quarries;
- controlling the location of development to prevent soil sealing and erosion;
- protecting agricultural land and gardens to prevent loss of soil and soil sealing;

For the period 2008 to 2018, actions of all Parties to the UNCCD, are guided by the strategic objective 2 – to improving the condition of affected ecosystems, and strategic objective 3 - To generate global benefits through effective implementation of the UNCCD. It is through these strategic objectives that indicator (soil monitoring) systems are proposed. National Soil Quality Monitoring Systems comprise:

- Soil erosion rate (RUSLE numerical model);
- Soil deposition in valleys and channels eroded from catchment areas;
- Soil depth; and
- Soil quality (bulk density, conductivity, moisture content, organic matter and pH).

Once the situation in Malta assessed, through such monitoring systems, action plans can be designed to mitigate the adverse influence of soil degrading processes.

The Malta National Action Programme to combat land degradation, drought and desertification (Malta UNCCD NAP) will be presented at the end of 2014. The document will provide detailed soil management mechanisms based on the assessed soil state (indicator system). These plans should be implemented at various levels so as to ameliorate the national soil quality.

NR3 → NR3	**NBSAP Measure**: Transposition and implementation of the Pesticides Framework Directive (2009/128/EC), which advocates the sustainable use of pesticides and integrated pest management, assists in reducing the potential damage on biological and water resources caused by pesticides. This is supported by the development of a national action plan.	**Progress:** 😐

National Actions and Outcomes Achieved: The national competent authority for the authorisation and regulation of pesticides is the Malta Competition and Consumer Affairs Authority (MCCAA). The MCCAA recognises a number of courses organized by individuals who have attended training by MCCAA. To date, most of the farmers are recognized as professional users of PPPs. Those farmers who have attended courses more than two years ago are being requested to re-sit for exam so as to renew their recognition. Professional users who are not in possession of such a license are considered as being in breach of the Pesticides Control Act. The Pesticides Framework Directive has been transposed by the "Sustainable Use of Pesticides Regulations, 2011" (Legal Notice 489 of 2011)[104]. A National Action Plan for the Sustainable Use of Pesticides for Malta (2013-2018)[105] has been developed as a strategy to minimise human and environmental health impacts resulting from the use of pesticides and as a requisite of the Directive. This National Action Plan notes that data on the current status of the biodiversity index in Malta and any possible correlation to it with

[104] http://justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=11822&l=1
[105] http://www.mccaa.org.mt/loadfile/40320fba-c5da-459b-9776-e5aec52ef72c

regard to the use of pesticides is being collected. This section will be updated as soon as this information will be made available. Guidelines on the safe application of pesticides and on Integrated Pest Management are being drawn up.
More information is available from: http://www.mccaa.org.mt/en/pesticides.
Since transposition of the Directive and the development of the NAP have been successfully achieved, this NBSAP measure will now focus on implementation for the period 2014-2020.

NR4 → **NR4**	**NBSAP Measure**: Effective measures are in place and implemented to address the over-abstraction and pollution of groundwaters, namely by nitrates and chlorides, in line with the Groundwater Directive (2006/118/EC), the Nitrates Directive (91/676/EEC), the Dangerous Substances Directive (76/464/EEC), transposing national legislation, the National Water Policy for the Future, and the Water Catchment Management Plan for Malta.	**Progress:** 😐

National Actions and Outcomes Achieved: This NBSAP measure calls specifically for the implementation of three Directives and focuses on groundwaters. Malta's national water policy is currently being updated. Moreover, the implementation of Malta's Water Catchment Management plan is ongoing. The Directives mentioned in this NBSAP measures have all been transposed into domestic legislation.
With respect to the Nitrates Directive, the following national regulations apply:

- The "Protection of Waters against Pollution caused by Nitrates from Agricultural Sources Regulations, 2011" (LN 321 of 2011 as amended by LN78 of 2013): have the objective of reducing water pollution caused or induced by nitrates from agricultural sources and preventing further such pollution. Under Regulation 6, waters affected by pollution and waters which could be affected by pollution if relevant action pursuant to regulation 6 is not taken, shall be identified. All known areas of land in Malta which drain into these identified waters and which contribute to pollution shall be in turn designated as vulnerable zones.
- The "Nitrates Action Programme Regulations, 2011" (LN 321 of 2011 as amended by LN 77 of 2013): this regulates the agricultural activities in Malta to reduce pollution of natural water resources by nitrates in particular through the implementation of the Nitrates Action Programme and to ensure compliance with Council Directive 91/676/EEC. Farmers are required to have at hand and upon request provide annual fertiliser plan for their holding (Regulation 4). Such plan should determine the crop fertilisation requirement of each crop type on each crop production unit of that holding for that year and shall establish safe methods of application. Regulations on storage facilities for livestock manure, manner of storage and location are also defined. Fertiliser limits are set as specified by Schedule I including the obligation that total nitrogen from livestock manure should not exceed 170Kg N/ha per yr as specified by Schedule II. Holdings with an area greater than 1 hectare under irrigated cultivation must be covered by a Nutrient Management Plan details of which are contained in Schedule III to the Regulations. The application of organic and inorganic fertilisers is not permitted between 15 Oct of a particular year and 15 March of the following year. Nitrogenous fertiliser (including organic manure, mineral fertilisers and slurry) shall not be applied to any type of natural water courses, land that is steeply sloping and shall take into account factors such as proximity to waterways, soil condition, ground cover, rainfall, when there is significant risk of causing water pollution unless incorporated immediately after application and within a minimum distance from natural water courses, springs, boreholes and the coast. Specifications are provided in Regulation 8. A National Nitrates Database is held by the Competent Authority as per Regulation 18.

The Maltese Islands were designated as one whole Nitrate Vulnerable Zone, meaning that the measures outlined in the Nitrates Action Programme are mandatory for all farmers. The competent authority for the Nitrates Directive is the Malta Environment and Planning Authority (MEPA), however, the implementation measures of the Directive are the responsibility of three different entities: MEPA is responsible for surface water monitoring, the Malta Resources Authority (MRA) is

the agency responsible for groundwater monitoring and regulation, and the Department of Agriculture, is responsible for the implementation of the Code of Good Agriculture Practice (CoGAP) and the Nitrates Action Programme (NAP). Malta's second Nitrates Action Programme compiled in August 2011 pursuant to Article 10 and Annex 5 of the Nitrates Directive can be accessed through the following link: http://cdr.eionet.europa.eu/mt/eu/nid/envuw2tlg

The Ministry for Sustainable Development, the Environment and the Climate Change coordinated the LIFE InfoNitrates Project (LIFE10 INF/MT/000092; project duration 01-SEP-2011 to 31-DEC - 2013). The project aimed to communicate to Malta's farmers and livestock breeders their key obligations under the Nitrates Action Plan – including the potentially harmful health problems resulting from improper management of manure, and of ways to reduce groundwater contamination. As an overall result of these initiatives, a reduction in the level of nitrates found in groundwater is expected. An extensive information and communications campaign was carried out by the Ministry, in order to convey the key project messages. Furthermore, training sessions were held for the country's 850-plus full-time farmers, as well as more than 1,700 part-time farmers (those with more than 1.5 ha of land) and 900-plus livestock breeders. Other members of farming households were also be invited to the training sessions.

Expected results:

- At least 60% of Malta's full-time farmers, 50% of part-timers and 75% of livestock breeders to be aware of their main obligations under the Nitrates Directive, and of the harmful effects on health of groundwater contamination;
- At least 75% of full-time and part-time farmers to be trained and provided with soil analysis kits to use nitrogen fertilisers more conscientiously;
- Levels of gross nitrogen balance for Malta's land parcel will diminish by at least 30%;
- At least 75% of livestock breeders will be informed about the proper management of animal manure; and
- At least 50% of livestock breeders will comply with the requirements of the
- National Nitrates Action Plan.

The Malta Business Bureau together with the Malta Hotels and Restaurants Association and the Malta Chamber of Commerce, Enterprise and Industry Malta implemented the LIFE Project on Investing in Water - Achieving Reduction in Water Consumption by Business in Malta (LIFE10 INF/MT/000091; project duration 01-OCT-2011 to 31-MAR-2014). The Project aimed to achieve behavioural changes that would lead to increased adoption of best practices for water conservation during the project lifetime among the target economic sectors by raising awareness on issues related to the water scarcity problem in Malta, and of the importance of water conservation among the target economic sectors. These will also serve as an example to other sectors to adopt similar measures thereby helping reduce pressure on groundwater resources and contributing towards Malta's EU obligation to achieve good status under the Water Framework Directive (WFD). Key results will include:

- 70% of the decision-makers of the targeted companies will become aware of the project's main messages;
- As a result of the overall goal of improved awareness on sustainable water issues, at least 20% of the targeted companies will adopt best practices to reduce their water consumption during the project lifetime; and
- 50% of the employees of the targeted companies, amounting to a total of 14 750 employees, will be informed of the project's key messages.

Although measures are in place to address over-abstraction and pollution, current data still portrays a need to improve the quality of groundwater status.

The proposed SPED includes the Thematic objective 7: To promote the efficient use of resources including water by *inter alia* protecting important groundwater recharge areas.

NR5	**NBSAP Measure**: Appropriate and cost-effective rainwater harvest technologies are adopted, where feasible, in urban and rural areas as an	**Progress:**

	environmentally sound approach to address imbalances between water supply and demand, and thus ensure long term water security in Malta (links with NR4).	NA

National Actions and Outcomes Achieved: The timeline for this measure is 2018-2020 and hence progress will be reported in the 2020 NBSAP Review.
The National Climate Change Adaptation Strategy documents that the then Ministry for Resources and Rural Affairs had investigated the feasibility of adapting flood relief infrastructure for this to be also suitable for rainwater harvesting but technical, environmental and cost-benefit and feasibility studies for the National Flood Relief Project demonstrated that this is not economically viable on a large scale. The Ministry shall continue to carry out studies between 2014-2021 and 2022-2029 to assess the technical, environmental and financial viability of a wide range of alternatives for enlarging existing rain harvesting infrastructure, as well as for enhancing the potential of reuse through the existing infrastructure. On the basis of these project appraisals, it will select the most suited options to develop and enhance infrastructure that adds value, and it will seek to secure EU Structural funding to assist the country to continually adapt to the adverse impacts of climate change on the availability of fresh water resources, by implementing rain harvesting and reuse projects, with the most appropriate type, scale and location, during these periods.
The proposed SPED includes the Thematic objective 7: To promote the efficient use of resources including water by *inter alia* promoting rain water harvesting provided that there is no unacceptable adverse impact on protected areas and species.

NR6	**NBSAP Measure**: Integrated water resources management, based on the ecosystem approach, is achieved via the full implementation of the Water Framework Directive (2000/60/EC amended by 2008/105/EC) and its programme of measures (which shall be updated in 2015) as well as the Marine Strategy Framework Directive (2008/56/EC). Such implementation shall be in a mutually supporting manner in the case of coastal waters. The successful implementation of measures in the Water Catchment Management Plan for Malta results in the attainment of "Good Ecological Status" in surface waters, "Good Chemical Status" for groundwater and surface waters, and "Good Quantitative Status" for groundwater bodies, all by 2015 (and if this is not possible, by 2021 or 2027). "Good Environmental Status" in the marine environment is achieved by 2020, at the latest, via drawing up a national marine strategy by 2016, and, where possible supported by other policies in line with relevant Regional Seas Conventions. Implementation of the MSFD on a national level also contributes to the goals of the EU's Integrated Maritime Policy.	**Progress:** 😐

National Actions and Outcomes Achieved: Malta's national water policy is currently being updated. Preparation is underway to compile the second Water Catchment Management Plan, and in so doing, fill those gaps identified by the comprehensive monitoring carried out in 2012/13 in coastal and protected inland surface waters. In relation to the implementation of the MSFD, Malta has undertaken the first part of the action plan stipulated by the Directive i.e. the assessment of status and determination of GES and targets. These will form the basis for the development of the programme of measures in 2015.
The NEP requires the preparation of a maritime spatial plan in line with IMP.

Theme 7: Climate Change (Code - CC)

CC1	**NBSAP Measure**: The interlinkages of climate change and biodiversity are taken into account when designing adaptation and mitigation activities, so as to ensure that such activities are both compatible with	**Progress:** 😐

	policies for the protection of biodiversity in Malta and the goals of creating a climate-resilient and low-carbon economy.	

National Actions and Outcomes Achieved: Climate Change Mitigation and Adaptation have been featuring high on the agenda of the Maltese Government in recent years. Malta adopted is National Climate Change Adaptation Strategy on May 2012 and implementation is in progress. The interlinkages of climate change and biodiversity are acknowledged in this strategy, as noted in Action 17 which states: "A core pillar of the adaptation strategy is the continued conservation of biodiversity and ecologically dependent ecosystems and, wherever possible, the restoration of habitats to a favourable conservation status".
The National Strategy for Policy and Abatement Measures Relating to the Reduction of Greenhouse Gas Emissions is also being implemented.
The trend on greenhouse gas emissions from 1990 to 2011 is available in Malta's PAMs Reports for 2013[106]. Information is also provided in the section 2.7.3 of Malta's 5NR.
Malta's PAF for the programming of the ESI Funds for the period 2014-2020 under Thematic Objective 2 includes the Thematic Objective 05: Promoting Climate Change Adaptation, Risk Prevention and Management, which addresses the need for integrated soil management, protecting against soil degradation and erosion, knowledge dissemination and training, research in the area of climate change and sustainable development as well as research to enable the identification of vulnerabilities and the development of mitigation and adaptation measures, incentives to help adjust farming methods and systems to cope with the effects of a changing climate, and investing infrastructure aimed at adapting to climate change including marine and coastal observation systems as well as flood relief infrastructure.

CC2	**NBSAP Measure**: The adaptive capacity of species and the sequestering ability of key habitats that act as sinks or carbon reservoirs are maintained or restored in so far as feasible (links with SH4), by way of forward planning, climate proofed management plans, where possible (links with EN2) and via the pro-active management of resources to reduce both non-climatic stresses (links with NR2, NR3 and NR4) and climate-related stresses.	**Progress:** NA

National Actions and Outcomes Achieved: Reporting on progress on this measure will be done in a later review noting the timeline indicated for the measure. Key habitats that act as sinks or carbon reservoirs such as wetlands and seagrass meadows are included within Malta's National Ecological Network of Protected areas and as such would be covered through the management planning process, as applicable.

CC3	**NBSAP Measure**: Existing data limitations (e.g. specific time series data for projections and to shed light on population trends) are addressed through biodiversity research and monitoring (links with RD1 and BM1) and other relevant environmental monitoring in order to provide quantitative data on vulnerability analyses based on climate projections and national impact scenarios which factor in Malta's small island state characteristics. This allows for prioritising measures to safeguard those species and habitats most at risk or most vulnerable to climate change (links with GR2 and SH4).	**Progress:** 😐

National Actions and Outcomes Achieved: A concise overview of the current knowledge on the 'sectoral' impacts of climate change in Malta, both at present and over the coming decades, has been completed[107]. It provides an overview of facts and projections related to climate change for the Mediterranean and Malta until the end of the 21st century for which data and model projections

[106] http://mra.org.mt/wp-content/uploads/2013/07/Malta-PAMs-Report-2013-V1.5.pdf
[107] http://mra.org.mt/climate-change/sectoral-impacts-of-climate-change-in-malta/

have been made available. The sectors assessed were agriculture, economy, health, land, migration, tourism and water resources. Salient impacts that emerged from this overview that affect biodiversity are as follows:

- Agriculture: (1) Projected increase in crop development difficulties due to pollination by insects no longer being synchronous due to early germination/budding and a longer growing season; (2) Diseases and insect pests benefit from warming, increasing stress on crop plants and requiring more attention to pest control. Selection of climate-resistant crops will be applied. (3) Pests which normally occur to the south of Malta spreading wider. (4) Projected increase in soil erosion and nutrient loss. (5) Increased maintenance of rubble walls against breaches that allow soil erosion.
- Economy: Local vulnerability is aggravated by a number of socio-economic stressors such as high population density, strained water resources, stress on local food supplies, utilities, infrastructure, coastal areas and waste disposal facilities. Continued over-development of coastal infrastructure will result in increased coastal erosion.
- Health: (1) Diseases transmitted via food, water and biological vectors are likely to increase. (2) Increase in pollen production due to prolonged pollen seasons in plants is expected to increase, posing a health risk to society.
- Land: (1) Major coastal areas prone to the impact of sea level rise and storm surges include the Northeast coast of Malta, North and Southeast cost of Gozo, as well as the Northern coast of Comino. Natural protected areas are extremely vulnerable to this phenomenon. (2) Drought stresses are expected to lead to changes in land-use patterns due to changes in agricultural practices, land abandonment and depletion of groundwater sources, negatively impacting our rural economy. (3) Projected increase in the impacts on terrestrial and aquatic plants, resulting in loss of biodiversity, especially in designated protected areas.
- Tourism: (1) Changes in ecosystems and biodiversity; (2) Aesthetics of landscape reduced. (3) Projected reduction of ecosystem services. (4) Increased desertification, wildfires. (5) Increased fluctuations in salinity, turbidity and nutrient levels due to increased surface runoff, reducing coastal water quality. (6) Increased risk of eutrophication in semi-enclosed bays. (7) Marine resource and aesthetics degradation in dive and snorkel destinations.
- Water: (1) Surface water quality and groundwater quantity will be affected by a changing water cycle. (2) Increased water consumption will further stress this resource, where the situation will be further compounded by the expected decreased rates of recharge. (3) Increased sediment runoff due to increased incidence of heavy downpours, resulting in blooms of harmful algae and bacteria, especially in semi-enclosed coastal areas.

Action 10 of the National Climate Change Adaptation Strategy states: "The Malta Resources Authority will work with the Malta Council for Science and Technology to:

(i) assess the introduction of an instrument based on the EU LIFE programme directed to boost local research in promoting technological response strategies and tools for adaptation measures as well as in investing in the capacity building of human capital climate change adaptation disciplines; and

(ii) ensure that the new National Strategy for Research and Innovation targets research related to the impact of climate change on Malta and related solutions to specific policy issues."

CC4	**NBSAP Measure**: Forestation for climate change mitigation is carried out on land of low biodiversity value or ecosystems largely composed of non-native species (following appropriate removal of invasive species using established guidelines – see BI2), and preferably degraded ones, and taking into account of the Pan-European Guidelines for Afforestation and Reforestation. Ecologically-sensitive forestation schemes, strategically located within the landscape, also enhance habitat connectivity (links with SH8 and EN4).	**Progress:** ☺

National Actions and Outcomes Achieved:

Malta's PAMs report (MRA, 2013) mentions that while afforestation projects have been undertaken

in recent years that have had an effect on the area covered by permanent vegetation, particularly trees, CO_2 sequestration has not been estimated, given the small contribution expected in terms of national GHG removals as well as the complexity of estimating GHG savings of this measure in the short term.

Afforestation areas in Malta include 'Foresta 2000' in Mellieħa, Salina National Park, Ta' Qali National Park, Xrobb l-Għaġin Park, rehabilitation of the closed Magħtab landfill and various other projects in conjunction with Local Councils, schools and other entities. In the period between 2004 and 2011 approximately 107,520 trees and shrubs where planted.

The NEP calls for afforestation projects to increase afforested area in Gozo, in line with biodiversity goals, by 5% by 2015. Implementation is in progress. One afforestation project (overlooking Mġarr Harbour) has been completed during 2011. Three afforestation projects on both public and private land have been undertaken as part of an Italia-Malta EU-funded project (Acronym: SIMBIOTIC) which seeks to improve on connectivity on the islands of Gozo and Sicily. Tree planting on the rehabilitated quarry at Il-Qortin ta' Isopu in Nadur is expected to occur by 2014 at the latest. It is understood that the rehabilitation of the former dumping site at Il-Qortin ta' Għajn Damma by Wasteserv Co Ltd will also involve the planting of substantial amounts of trees.

As reported in Malta's PAMs Report (MRA, 2013) over 5,000 trees and over 56,000 shrubs/climbers/perennials were planted from 2010 to 2012 in places such as Chambray Grove, Three Hills Garden and the SIMBIOTIC EU project.

The Ministry responsible for the Environment has commissioned the development of a National Afforestation Plan and which should take into consideration the requirements of Malta's NBSAP[108].

CC5 → CC5	**NBSAP Measure**: The linkages between inland water ecosystems and climate change are assessed and the risks of water shortages for freshwater-dependent species are identified and rectified, where possible, especially during the hot summer months.	**Progress:** 😐

National Actions and Outcomes Achieved: The Water Catchment Management Plan for the Maltese Islands (2009 -2015) addresses all aspects concerning water issues. Additionally, the achievement of this plan's objectives impacts other sectors directly, vis-à-vis health, biodiversity, landscape, soil and climate factors. Measures set out in the WCMP were subjected to a climate change check. Such a check was performed to identify those measures best suited to strengthen Malta's capacity in adapting to climate change and in identifying those that are deemed less effective directly in this regard. See information provided above on the sectors' climate change impact overview under NBSAP Measure CC3 vis-à-vis the water sector. Main impacts will be with respect to droughts and changes in the water cycle, which will also affect water quality.

Risks of water changes for freshwater-dependent species (such as the Maltese freshwater crab (*Potamon fluviatile lanfrancoi*) would need to be indentified on an *ad-hoc* basis especially during but not limited to the hot summer months. No tailored measures are reported at present.

Management plans of protected areas, which focus on species and habitats of European Community importance, do however comprise measures that benefit species and habitats vulnerable to climate change by for instance making sure that the extent of existent habitat is retained or improved and that any pressures are reduced. Increasing the population of certain species also indirectly makes them less vulnerable to climate change-related impacts.

The timeline for the NBSAP Measure should be amended to blue since action for freshwater-dependent species (and vulnerable habitats) would need to be taken as the need arises.

[108] https://www.gov.mt/en/Government/Press%20Releases/Pages/2014/August/16/pr141847.aspx

Theme 8: Pro-biodiversity Businesses and a Green Economy (Code - BE)

BE1	**NBSAP Measure**: Increased cooperation and involvement of the private sector and businesses in biodiversity conservation is encouraged, including the promotion of private sector voluntary initiatives/green business schemes, the support/uptake of pro-biodiversity business projects and by including biodiversity safeguards in corporate plans and programmes, as appropriate following guidance issued by the World Business Council for Sustainable Development and other organisations as well as by learning and sharing experiences and best practices through the EU Business@Biodiversity Platform.	**Progress:** NA

National Actions and Outcomes Achieved: The timeline for this measure is 2018-2020 and hence progress will be reported in the 2020 NBSAP Review.

The NEP calls for encouraging financial sector investment in green portfolios and products through advocacy, awareness-raising and publicity, as well as business start-ups in the environmental field through initiatives such as ensuring that green industries continue to qualify for space in business incubators. Both are in progress. The Malta Enterprise continued in 2011 and 2012 to encourage business start-ups in the environmental field. Green industries continued to qualify for space in business incubators, although Malta Enterprise has indicated that the take-up was low.

MEPA is implementing Corporate Environmental Responsibility. So far it has implemented two initiatives which involved the MEPA Car Free Day and a Clean Up Day at Ballut ta' Marsaxlokk in September and December of 2013, respectively and an event involving the planting of trees in a primary school in Ħal Għargħur on 2 April 2014.

Throughout the years Banks in Malta have been important sources of financing for direct and indirect conservation efforts in the country. Support is not limited to providing financial sources. Banks may:

- act as co-financiers of biodiversity projects (e.g. Bank of Valletta is a co-financier of the LIFE+ Migrate Project while HSBC Malta Foundation has sponsored the LIFE Yelkouan Shearwater Project),
- host and finance conferences and their proceedings (e.g. APS Seminars),
- support environmental educational programmes (e.g. Bank of Valletta supports the Dinja Waħda environmental educational programme for primary schools, while HSBC Malta Foundation supports the Eco-Schools environmental education programme),
- dedicate staff time in tree planting events and in cleaning events (e.g. Members of staff from the Bank of Valletta have participated together with students from schools in a planting event as part of the LEAF - Learning About Forests – programme, while HSBC staff have been involved in tree planting events as part of Gozo's Afforestation and Ecology initiatives),
- support to build centres (e.g. APS Bank Ltd has supported BirdLife Malta in building the visitor centre at Simar Nature Reserve in Xemxija while HSBC Malta Foundation has provided support to the I-Land Observatory and Information centre in tal-Kunċizzjoni area of Mġarr launched by University of Malta's Institute of Earth Systems), and
- support the publication of scientific journals (e.g. Bank of Valletta supports the publication of the bulletin issued by the Entomological Society of Malta).

BE2 → BE2	**NBSAP Measure**: Eco-efficient facilities, which adopt the cleaner production approach, and use environmentally-sound and innovative technologies, are increasingly established.	**Progress:** 😐

National Actions and Outcomes Achieved: The NEP calls for the continued provision of financial assistance for eco-innovative start-ups, businesses implementing eco-innovative solutions, and for companies bringing the innovations to market. Existing and new companies investing in renewable

energy sources and developing or improving the technology for the green energy sector qualify for incentives. Through structural funding, one million Euros were committed for eco-innovation through the European Regional Development Fund (ERDF) Innovation Actions Grant Scheme (Environment) between 2008 and 2013. The take-up from applicants for grants related to eco-innovation was rather low, however: the number of assisted companies applying for environmental innovations as a percentage of the total 180 beneficiaries of the ERDF Innovation Actions Grant Scheme was less than 5%.
The timeline for the NBSAP Measure should be amended to blue since this is an ongoing initiative.
Also relevant to this measure, is the fact that MCAST students within the various engineering, agribusiness and science institutes follow a range of programmes and modules relating to resource efficiency and renewable energy. This is industry driven, in accordance to the competences required.

BE3	**NBSAP Measure**: The economic valuation of ecosystem services is assessed and integrated into green and reporting systems at a national level by 2020.	**Progress:** NA
National Actions and Outcomes Achieved: The implementation period for this measure is 2018 and 2020 and hence progress will be reported at a later stage (2020 NBSAP review). There are ongoing discussions however with respect to green accounting. At present, the National Statistics Office is producing data on environmental taxes, environmental protection expenditure and air emission accounts.		

Theme 9: Financing Biodiversity (Code - FB)

FB1 → **FB1**	**NBSAP Measure**: European Community and new funding opportunities for biodiversity, including public and private investment and innovative financing of biodiversity conservation and protected areas, are identified at a national level bearing in mind the findings of "The Economics of Ecosystems and Biodiversity" (TEEB) study, and incorporated in a national biodiversity financial plan by 2014. The purpose of this biodiversity financial plan is to assist resource allocation and uptake of funds towards supporting projects that adopt effective and innovative approaches to advancing biodiversity conservation and sustainable use in the Maltese Islands.	**Progress:** 😐
National Actions and Outcomes Achieved: Work on the drafting of a national biodiversity financing plan as required by the CBD by 2015 has commenced. The timeline should be extended to reflect that of the CBD. From an ESI Funds 2014-2020 perspective, Malta's Partnership Agreement (PA), and subsequently its Operational Programmes (OP), will provide the necessary financing policy framework for the 2014-2020 programming period. In Malta, there are four Operational Programmes that will guide the strategic priorities identified in the Partnership Agreement i.e. Operational Programme I in relation to the European Regional Development Fund (ERDF) and Cohesion Fund (CF), Operational Programme II in relation to the European Social Fund (ESF), the Rural Development Programme and the European Maritime and Fisheries Fund Operational Programme. Malta has identified three main Funding Priorities which will serve as the main overarching objectives for the programming of EU funds for Malta from 2014 to 220. These are: 1) Fostering competitiveness through innovation and the creation of a business-friendly environment; 2) Sustaining an environmentally-friendly and resource-efficient economy; and 3) Creating opportunities through investment in human capital and improving health and wellbeing. Biodiversity financing is included within the funding priority 2 on 'Sustaining an environmentally-		

friendly and resource efficient economy'. Under this priority there is recognition of the importance of investing in the Maltese environment as one of the major contributors towards economic growth. Under this priority there is commitment to ameliorate the environment where it is stated that interventions within the rural environment will be undertaken through approaches that embrace biodiversity amongst other things. Through the thematic objective 6 on 'Protecting the Environment and Promoting Resource Efficiency' halting biodiversity loss is identified as a priority for Malta and Government is committed to continue supporting interventions in relation to biodiversity through the implementation of the National Biodiversity Strategy and Action Plan. Through this document, investment will be directed towards a number of key areas in line with the Europe 2020 targets, which will continue to enhance environmental sustainability, social well-being and a healthy society whilst fostering competitiveness through economic development and job creation.

Malta's Operational Programme I includes the PRIORITY AXIS 5: Protecting our environment. This in turn includes the following investment priorities:

- Investment Priority 1: Investing in the waste sector to meet the requirements of the Union's environmental Acquis and to address needs, identified by the Member States, for investment that goes beyond those requirements.
- Investment Priority 2: Investing in the water sector to meet the requirements of the Union's environmental Acquis and to address needs, identified by the Member States, for investment that goes beyond those requirements.
- Investment Priority 3: Conserving, protecting, promoting and developing natural and cultural heritage.
- Investment Priority 4: Protecting and restoring biodiversity and soil and promoting ecosystem services, including through Natura 2000, and green infrastructure.
- Investment Priority 5: Taking action to improve the urban environment, to revitalise cities, regenerate and decontaminate brownfield sites (including conversion areas), reduce air pollution and promote noise-reduction measures.

The national managing authorities for the structural and other funds oblige the beneficiaries to follow environmental legislation such as the Environment and Development Planning Act and the Environmental Impact Assessment Regulations (LN 114 of 2007) through the individual grant agreements. Furthermore, applicants are also encouraged to adopt practices which focus on environmental sustainability in the implementation of the proposed projects.

While the main responsibility for financing Natura 2000 lies with the Member States, Article 8 of the Habitats Directive explicitly recognises the need for EU support for management of the sites, through co-financing by Community financial instruments. The current approach, set out in a 2004 Commission Communication on financing Natura 2000 for the 2007-2013 financing period, is to integrate the financing of Natura 2000 into the funding streams of different EU policy sectors. It is now recognised that the effective management and restoration of Natura 2000 sites is central to attainment of the EU 2020 biodiversity target and that a strengthened integrated approach using the various EU sectoral funds, will provide a strong basis for the new Natura 2000 financing strategy. In this respect Prioritised Action Frameworks (PAFs) can serve as strategic planning tools to strengthen the integration of Natura 2000 financing into the use of relevant EU financial instruments for the next programming period. Member States will still need to specify their financing needs for Natura 2000 under the relevant plans or programmes. The socio-economic value of protected areas in Malta has been assessed as part of work done on Malta's Prioritised Action Framework (PAF). Whilst providing an overview of the NATURA 2000 sites in Malta, the PAF aims to identify the strategic conservation priorities for these sites for the period 2014-2020. A general list of required measures has been recorded. Examples of such measures include *ex situ* conservation; propagation of species; pest control; planting of trees/ shrubs and removal of alien species; maintenance of boundary walls; rationalisation of footpaths; awareness related measures; habitat restoration; provision of facilities and waste management. Additionally the PAF has identified key measures required for the management of the Annex I habitats and Annex II species of the EC Habitats Directive. Pressures and threats identified for each habitat and species through Article 17 datasheets

have been addressed and the appropriate/ relevant priority measure assigned. Potential sources of funding have also been identified for the measures and the final draft management plans for terrestrial NATURA 2000 sites which should be available in 2014 should provide an indication of the financial requirements of a number of these required measures. Such measures include the following:

- Eradication of invasive alien species from a number of sites including Ramla tat-Torri and Selmunett, Ramla l-Ħamra; and Għajn Tuffieħa;
- The removal of fences and hence the adoption of an open access policy, whereby Natura 2000 sites are widely open and accessible to the general public;
- Education and increasing awareness initiatives which would indirectly contribute to the enhancement of all green infrastructure within Natura 2000 sites;
- Habitat restoration - specific recent examples include the restoration of a number of marshes such as at Simar, Marsaxlokk and Marsaskala;
- Rubble wall restoration is an ongoing practice in Malta, which enhances the aesthetic value of the traditional landscape, whilst acting as a corridor between habitats, and also acting as a habitat in itself. Reduction of soil erosion is another asset;
- Enforcement of offroading legislation (including site specific regulations such as the Majjistral Park), leads to the reduction of habitat degradation;
- Surveying, through which degraded habitats are identified and the appropriate restoration undertaken.

FB2	**NBSAP Measure**: Market-based instruments (such as economic incentives, fiscal instruments, environmental certification schemes, labelling/branding and green public procurement) that have the potential to support the conservation and sustainable use of biodiversity, as well as improve the sustainability of supply chains, are explored, and where feasible, established and implemented. Moreover instruments/standards that recognise the value of goods of production systems that sustain biodiversity and the diversification of niche markets at a local level are also identified and fostered, including for those goods and services produced by protected areas (links with FB1).	**Progress:** 😐

National Actions and Outcomes Achieved:

Financial support is provided to organic producers under Agri-environmental measure (AEM) 8 to those that are in the process of converting their holding, and those individuals who have already obtained organic certification. In addition to the above there is also Measure 132, which reimburses farmers for expenses incurred as a result of participating in the organic farming quality scheme. Numerous other AEMs under the current Rural Development Programme provide economic incentives which support and conserve biodiversity, such as AEM 1 which promotes the use of environmentally friendly PPPs in vineyards.

Within the context of the NEP, discussions are ongoing with the Ministry of Finance on the development of an Action Plan for the development of market-based instruments in the environmental field.

Theme 10: Communication, Education and Public Awareness (Code - PA)

PA1	**NBSAP Measure**: Malta continues its biodiversity campaign to celebrate the UN Decade for Biodiversity via audience-targeted programmes on communication, education and public awareness (CEPA), which adopt a wide range of communication tools and media following guidance by the CBD CEPA Toolkit. Such a campaign aims at increasing communication (i.e. gaining cooperation in motivating actions in support of biodiversity),	**Progress:** ☺

	education (i.e. empowering people by promoting behavioural changes in support of biodiversity) and awareness (i.e. drawing attention about key issues to people who can influence outcomes in support of biodiversity).	

National Actions and Outcomes Achieved: Malta launched in 2010 a biodiversity information campaign with the aim of raising awareness on biodiversity-related issues as part of the United Nation's International Year of Biodiversity. This campaign has been extended to cover the UN Decade for Biodiversity and targets various audiences but mainly the general public and children. This campaign involves the organisation of various information and education initiatives, which are undertaken by MEPA to help disseminate information on the importance and status of Malta's biodiversity. Initiatives include publication of biodiversity articles in local newspapers, the setting up of information panels, and maintaining Malta's national biodiversity clearing house mechanism on the Authority's website. MEPA also published a set of commemorative stamps to celebrate the '2010 International Year of Biodiversity', and which depicted four species found in the Maltese Islands: *Podarcis filfolensis filfolensis*, *Hydrobates pelagicus*, *Anacamptis urvilleana* and *Potamon fluviatile lanfrancoi*. One of the most successful initiatives is the biodiversity tours to a selected protected area(s), whereby MEPA officials provide on average seven free guided tours per year to members of the general public. These are very well attended MEPA also participates in 'Malta u lil Hinn Minnha', an award winning documentary TV show that is broadcast on Sundays (with continuously repeated broadcasts on different days, times and stations). During this programme, MEPA provides a guided visit to a protected area, with information snippets on Malta's natural heritage. Posters on protected species, are not only available in digital format on the MEPA website, but are also distributed to interested parties. A series of bookmarks and coasters depicting important Maltese species had also been produced and were also widely distributed free of charge. Malta is especially aware of the importance of educating children and students on environmental and biodiversity-related issues. In this respect, a number of scout groups (children aged from 7 to 16 years) were given interactive presentations on biodiversity during their summer camp in August and September of 2010 and also subsequently. Such educational talks address what biodiversity is, why it is important and what can be done to safeguard biodiversity. Such talks are also given to summer schools and this year also to students from secondary schools (more than four schools). A number of informative and tailor-made presentations on biodiversity (sometimes also including a quiz) were also delivered to the general public in conjunction with local councils (Sliema and Mellieħa in 2010), to socially disadvantaged individuals (1 in 2011), and to hotels (1 in 2010). In the case of local councils for instance the focus was on the important protected areas within the remits of that particular council. To mark the International Year of Biodiversity, moreover, a diverse number of activities and initiatives were also organised by local NGO's; such included public guided walks to EU Natura 2000 sites, the holding of exhibitions and presentations.

Malta also celebrated International Biodiversity Day on 22 May 2014 with the theme "Island Biodiversity". A number of activities were held[109].

BirdLife Malta's, education programme known as "Dinja Waħda" teaches primary children about the importance of the environment, Maltese biodiversity and encourages active learning to learn how to protect it thereby contributing to NBSAP Measure PC1[110]. BirdLife Malta's events programme furthers these education and awareness goals:

- Events such as the Shearwater boat trips bring BirdLife Malta members and non-members closer to Malta's biodiversity, installing greater awareness and appreciation of the status, threats and ways they can support it;
- Other events support international schemes, such as a Seabird event held at Malta's National Aquarium on Natura 2000 day, and participation in Let's Do It Mediterranean, part of a global campaign to reduce pollution.

[109] http://www.cbd.int/idb/2014/celebrations/mt/

[110] http://www.birdlifemalta.org/Content/teachers/dinja_wahda/AboutDinjaWahda/1059/#.VD5CCGddVMc

According to the R&D Department at MEDE, primary students are increasingly made aware of the term "biodiversity" by active participation and engagement in out-of class and/or curricular lessons related to the living organisms (particularly local species) in the surrounding environment. Primary school students are engaged in programmes that promote student participation to support biodiversity within their environment. Such programmes primarily include the afore-mentioned Dinja Waħda Project and EkoSkola Programme. The latter programme includes biodiversity is one of the themes explored and is even furthered in secondary schools. The activities presented in the Dinja Waħda Action Guide and other activities provided by the teachers show the children, species and their habitats, help them understand the importance of the environment and the action necessary to protect it. Primary school students also encounter themes related to biodiversity in the Primary Science Curriculum. Schools also participate in national and international initiatives and projects such as Young Reporters for the Environment (YRE) and Learning About Forests (LEAF), related to environmental issues thus emphasising the role of biodiversity. During the scholastic year 2012/2013, the piloting of Press Kids aimed for primary school students was also launched. During scholastic year 2013/2014 the Directorate for Student Services (DES) provides the service of nine peripatetic teachers that support teachers' and students' participation in environmental awareness campaigns, environmental education activities and/or competitions. State Colleges also organise locality based events with the support of the peripatetic staff in close collaboration with local environmental NGOs namely Nature Trust Malta and BirdLife Malta.

The Centre for Environmental Education and Research (CEER) at the University of Malta (UoM) actively supports the formation of the ESD teachers working on the above-mentioned FEE programmes (i.e. EkoSkola, YRE and LEAF). These programmes have a strong community outreach component and local research (conducted by CEER) has shown the positive impact children are having on their parents' lifestyles and choices. Moreover, the centre is responsible for the ESD component in the teacher training programme. CEER has initiated the task of drawing up the National Strategy for Education for Sustainable Development. Currently plans to carry out initial data collection are underway.

The Department of Biology (DoB) at UOM covers aspects of biodiversity as part of study units that are included in undergraduate courses within the DoB. Furthermore, the DoB holds basic courses on marine and terrestrial biology for the general public. Such courses include basic coverage of biodiversity.

In line with the NCFHE 'Descriptors of Key Competences in the National Qualifications Framework – Levels 1-3', as of academic year 2014-2015 all MCAST Level 1, Level 2 and Level 3 students will follow a taught key skill module titled 'Science and Technology', which incorporates the Living World and various biodiversity topics. Level 1-3 students amount to 1,568 (first call statistics) in academic year 2013-2014.

Other CEPA-related activities include those undertaken at the Cliffs Interpretation Centre in Dingli Cliffs[111], which is managed by La Pinta Ltd and provides the public, particularly visitors and tourists with information about Dingli and the surrounding countryside, and at Il-Majjistral Nature and History Park[112], which is managed by the Heritage Parks Federation and provides various awareness events such as guided nature walks, open days at the Park and also guided snorkelling just to mention a few. More detailed information on such events is provided online on their respective websites.

PA2	**NBSAP Measure**: A National Biodiversity Database incorporating updated red data lists is completed by 2016 as a mechanism for maintaining and organising data on biodiversity. It is launched on Malta's Clearing House Mechanism (CHM) thereby creating a one-stop shop for access to updated biological information on species and habitats, and	**Progress:** NA

[111] http://www.thecliffs.com.mt/
[112] http://mt.majjistral.org/home

	measures in place to protect them.	
National Actions and Outcomes Achieved: Progress on this measure will be reported at a later stage (2017 NBSAP review).		

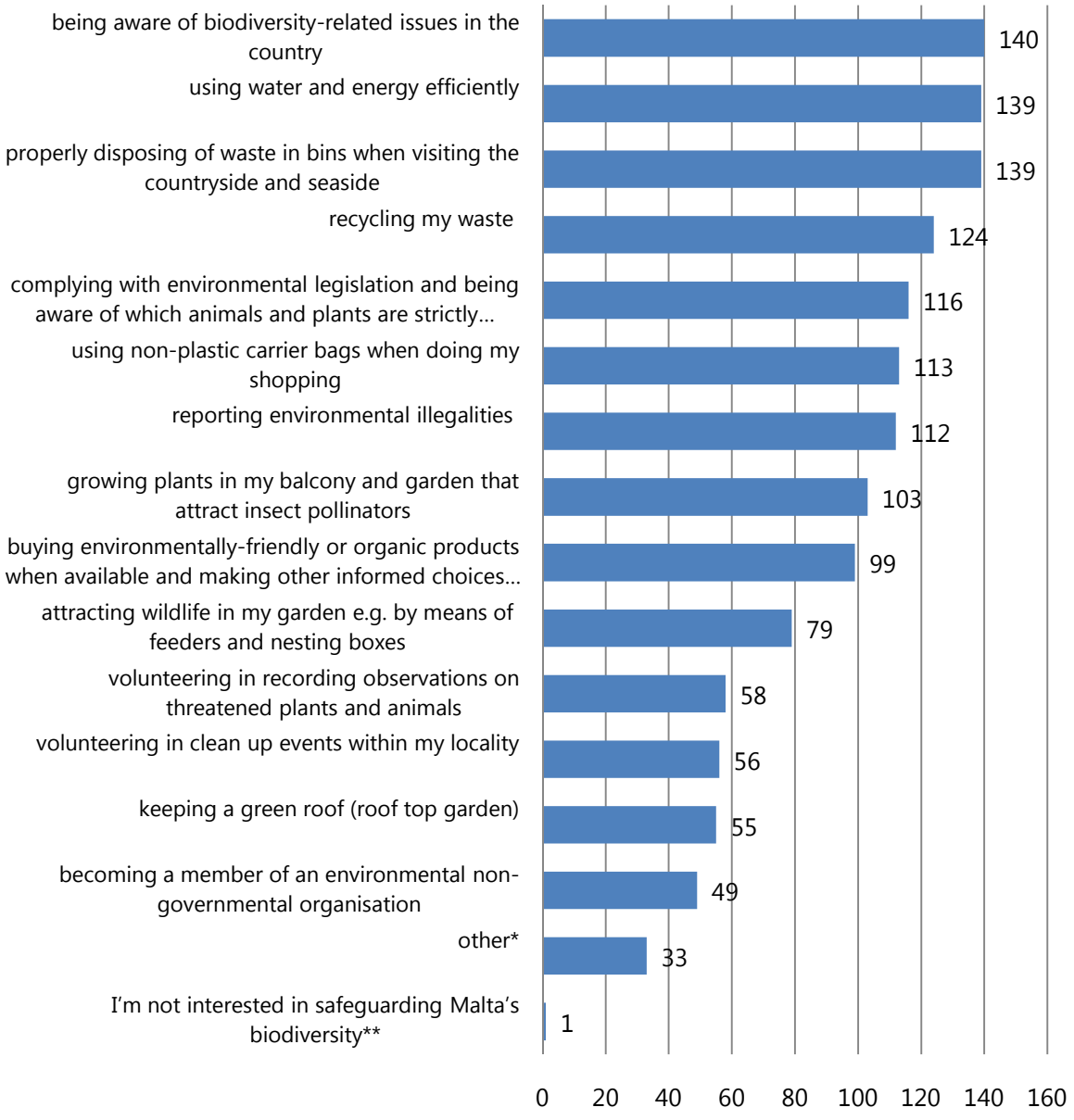
PA3	**NBSAP Measure**: A communication campaign on Natura 2000 is launched by 2014.	**Progress:** ☺
National Actions and Outcomes Achieved: The Natura 2000 Information Campaign was undertaken as part of the co-financed EAFRD Project completed in April 2014. As part of this project the website http://natura2000malta.com/ was launched. Various Natura 2000 public exhibitions and talks were held (in Marsascala and Pembroke in Malta, and another in Gozo). Such exhibitions consisted of a number of posters explaining the management planning process for Natura 2000 sites, presentation of leaflets and also a comments box. Moreover, a Facebook page entitled Natura 2000 Malta was also put up as part of the communication strategy, while a series of television and radio adverts were also aired during the implementation lifetime of the project. Additional information on specific issues related to marine habitats and species and Natura 2000 were also covered by communications campaigns and related information under the LIFE+ Baħar projects.		

Theme 11: Participatory Conservation (Code - PC)

PC1	**NBSAP Measure**: Members of society view Malta's biodiversity and its conservation as a "national insurance policy" and actively engage in resource efficient lifestyles and practices as well as participate in conservation measures, coordinated by voluntary bodies entrusted with the role of inspiring and engaging the public in conserving biodiversity within their locality (links with IE1).	**Progress:** 😐
National Actions and Outcomes Achieved: With regards to the student community, students are actively engaged in the ESD programmes, which aim to empower students in environmental decisions and actions. The programmes encourage the participation of children in decision-making, planning and implementation of environmental activities within the school with the aim of improving the quality of life in their school and community. At the University of Malta, all the work done by CEER, particularly the work with EkoSkola and other community projects focus on empowering citizens to make sustainable choices. As part of the questionnaire-based survey on biodiversity valuation (see Section 1.2.2 of Malta's 5NR), respondents were queried on ways how they would contribute to safeguard biodiversity in the Maltese Islands. This question listed types of initiatives that may either directly or indirectly benefit biodiversity. Respondents were required to tick their chosen initiatives. Chart 16 depicts the chosen replies by the 166 respondents. Being aware of biodiversity-related issues in the country received the most responses (140/166; 84%), whilst becoming a member of an environmental NGO received the least responses (49/166; 30%). One respondent ticked the reply "I'm not interested in safeguarding Malta's biodiversity". The respondent in question commented that in his opinion not all components of biodiversity require safeguarding. It is noteworthy that initiatives that would directly benefit biodiversity ranked 8th and 10th in total number of responses. These are respectively growing plants in balconies and garden to attract pollinators (103/166; 62%), and attracting wildlife by means of feeders and nesting boxes (79/166; 48%). Two respondents clarified that they did not have gardens. Out of 166 respondents, 58 (35%) would contribute by volunteering in recording observations on threatened plants and animals. Such citizen science to gather information on components of biodiversity is increasingly being applied by countries. Its application in Malta warrants further promotion and uptake however. In contrast, initiatives that are more related to the use of resources such as water and energy (139/166; 84%) and issues related to waste disposal		

(139/166; 84%) and waste recycling (124/166; 75%) received a higher response rate than such direct initiatives and also higher than responses on complying with environmental legislation (116/166; 70%) and reporting environmental illegalities (112/166; 68%).

Chart 16 – Question – How do you think you can or would contribute to safeguard Malta's biodiversity?



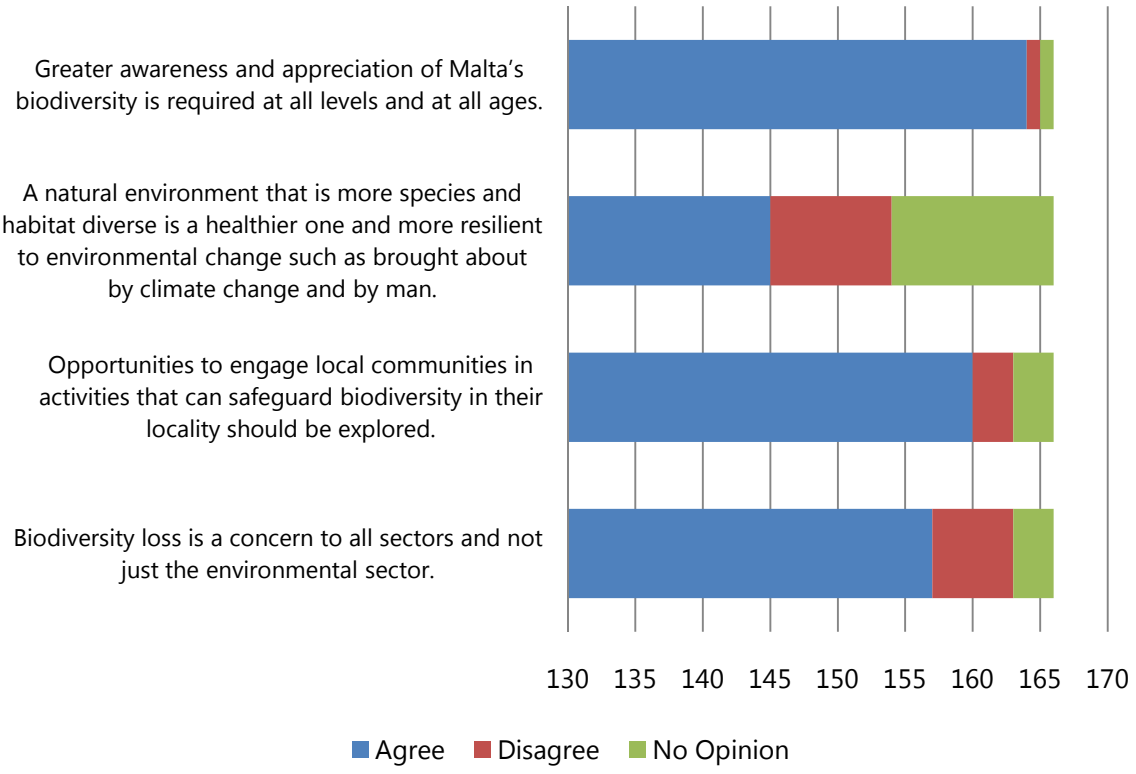
In addition to the examples provided, respondents had the option to list other examples of ways of supporting biodiversity. The following examples were provided by a total of 33 respondents:

- Environmental education, including of the younger generation (5 respondents);
- Lobbying/petitioning politicians/the government for biodiversity to be a priority/more commitment (2 respondents);
- Advocating for more sustainable policies e.g. in land-use planning (2 respondents);
- Sharing information/knowledge and enthusiasm about importance of biodiversity (2 respondents);
- Strengthening/having more adequate legislation and more safeguard for biodiversity and the environment (2 respondents);
- Promoting biodiversity on one's private/managed land (2 respondents);

- Taking measures not to disturb habitats (1 respondent);
- Respecting beaches and the sea (1 respondent);
- Having more open spaces in our urban areas (1 respondent);
- Working directly for biodiversity (1 respondent);
- Prohibiting indiscriminate building development in the countryside (1 respondent);
- Adults being a role model for the younger generation to stress importance of biodiversity and why (1 respondent);
- Using art (paintings/photography) to promote biodiversity awareness (1 respondent);
- Promoting activities that help people enjoy and take care of the natural environment (1 respondent);
- Better use of land (too built-up and many empty houses and buildings) (1 respondent);
- Supporting agro-tourism ventures and low-input farming (1 respondent);
- Set up nurseries of rare species (1 respondent);
- Proper policing and enforcement of the environment (1 respondent);
- Growing one's own produce (1 respondent);
- Proper management of hazardous domestic waste (1 respondent);
- More documentaries on the environment (1 respondent);
- Creating awareness for environmental health and diversity (1 respondent);
- Voting in online/organised petitions (1 respondent);
- Buying eco-friendly products and with least amount of packaging/managing consumerism not to buy unnecessary objects (1 respondent).

In another question, respondents were asked whether they concurred with four generic statements. The replies are shown in Chart 17.

Chart 17 – Question – Do you agree with the following statements?



A significant majority of respondents (164/166; 99%) agree that greater awareness and appreciation of Malta's biodiversity is required at all levels and at all ages. To a slightly lesser extent there was also agreement (160 respondents out of 166; 96%) with the statement that opportunities to engage

local communities in activities that can safeguard biodiversity in their locality should be explored. Both biodiversity education and public awareness (BEPA) and participatory conservation through the engagement of local communities in conservation initiatives are advocated by Malta's National Biodiversity Strategy and Action Plan (NBSAP). While raising awareness is deemed an ongoing effort as part of national celebrations of the United Nations Decade for Biodiversity with the national logo "Biodiversity: It's Your Life, Protect It", new opportunities for engaging citizens in local biodiversity conservation efforts need to be explored.

PC2	**NBSAP Measure**: The positive and active role of Maltese farmers as stewards of agrobiodiversity and in the maintenance of the countryside and rural environment is encouraged.	**Progress:** ☺

National Actions and Outcomes Achieved: The positive role of Maltese farmers is well acknowledged and continues to be encouraged in Malta's Rural Development Plan and also in land use policies.

Farmers are encouraged to maintain the agricultural land and avoid land abandonment through the less favoured measures. These farmers are obliged to observe the cross-compliance obligations. Furthermore farmers may go above the cross-compliance obligation and enter in a five year commitment under the agri-environmental measures. Under the RDP farmers are encouraged to receive advisory support through the use of the Farm Advisory Services (FAS).

The 2014-2020 RDP is the product of 2 years of consultation with stakeholders. 5 priorities emerged, one of which was landscape and environment, which envisages agriculture supporting the environment as a public good. In this regard it supports farmers in carrying out measures that have a positive impact on the landscape and the environment.

PC3	**NBSAP Measure**: Outreach to farming, fisheries and aquaculture cooperatives, as well as hunting associations, helps to foster new partnerships and new projects or other collaborative work in support of biodiversity.	**Progress:** 😐

National Actions and Outcomes Achieved:

Farming: The RDP 2007-2013 provides support to farmers willing to increase their knowledge on farm activity. This support is provided under the M111. Furthermore, farmers may seek advice under M114 related to the Farm Advisory Services (FAS). Moreover the RDP has foreseen to provide the support to farmers and processors willing to produce a new product. Funding will be available for the creations of Valley Management Partnerships (VMPs) between land managers, land owners and local municipalities for cooperation in protecting and conserving the landscape, natural habitat and environment. VMPs will plan and implement a variety of actions within their valley in a more strategic and cost-effective manner than would be possible for individual farmer applicants.

Fisheries and Aquaculture: The Department of Fisheries and Aquaculture (DFA) conducts meetings in order to disseminate information about any measures that aim to move towards sustainable practices while giving the opportunity for fishermen to air their views. Stakeholder meetings are also carried out in order to inform fishermen about any legislative provisions deployed by the EU and to mitigate any conflicts between other stakeholders. The Department is also conducting two projects in collaboration with Fisheries Cooperatives. These projects are Gap II and Marine Spatial Planning. The Gap II Project is an FP7-funded project which aims to improve collaboration between scientists, fishers and policy-makers. The Marine Spatial planning programme protects sensitive zones by prohibiting any trawling activities. This exercise was also done so as to try and reduce conflicts between the fishers themselves and other users of the sea.

Hunting: The National Ornis Committee provides a platform for collaboration amongst stakeholders including hunting organisations and representatives of bird conservation organisations. There has been stepped up communication with stakeholders and improved transparency with regards to birds such as in terms of reports concerning enforcement during the Autumn 2013 season, the

report on the outcome of spring hunting derogations in 2013 and 2014, multiple updates on the enforcement situation during the spring 2014 hunting season and other materials have been made public and were extensively covered by the national press. In parallel, there has been an intensification of communication with stakeholders, particularly the hunting community. In this regard, the Wild Birds Regulation Unit carried out a communication campaign aiming to raise awareness of the legal obligations and to improve compliance. The campaign consisted of targeted mail shots to registered hunters, dissemination of regulatory information via bulk SMS, as well as a TV spot campaign during the 2014 spring hunting season.

PC4	**NBSAP Measure**: The CBD Plan of Action on Sub-national Governments, Cities and Other Local Authorities for Biodiversity (2011-2020) is implemented according to national priorities and needs by: - engaging the participation of local councils in supporting the implementation of Malta's NBSAP, at the local/sub-national level by encouraging them to reach out to major groups such as children and youth, women, NGOs and businesses, as well as by raising awareness and promoting local action and synergistic partnerships for biodiversity in their locality; - fostering and acknowledging crucial efforts of local communities in implementing the NBSAP by supporting biodiversity in their locality; and - integrating biodiversity considerations into urban infrastructure investments (where feasible) and procurement choices.	**Progress:** 😐
National Actions and Outcomes Achieved: The important role of Local Councils in reaching out to local communities for raising awareness on biodiversity and informing them on key issues such as the Natura 2000 management planning process is recognised. Indeed public talks, presentations and exhibitions are held at Local Councils. See information provided under the NBSAP Measures PA1 and PA3. Malta's NEP requires Local Councils to draw up local sustainable development strategies by 2014. The ministry responsible for local councils provided funding towards the drawing up of local sustainable development the strategies in 2009 and 2010 but due to funding restrictions could not offer it again. A total of 15 local councils have prepared such strategies, however biodiversity was not the focus of such strategies.		

Theme 12: Enforcement (Code - EF)

EF1	**NBSAP Measure**: Resource constraints in the enforcement sector are addressed resulting in more timely and effective interception and deterrence of illegalities by way of *inter alia* setting up a centralised call centre on environmental contraventions and by setting up a task force assigned with the role of strengthening consolidation between environmental enforcement agencies (links with CB1).	**Progress:** 😐
National Actions and Outcomes Achieved: While the work on the setting up of a centralised call centre on environmental contraventions is yet to commence, information on environmental enforcement roles and responsibilities is provided via an online website[113] which was launched in 2012 within the government portal. This needs updating. The setting up of a task force assigned with the role of strengthening consolidation between environmental enforcement agencies is currently on hold in view of plans to de-merge the Malta Environment and Planning Authority. Field enforcement deployment levels during the 2013 autumn and 2014 spring bird migration		

[113] https://gov.mt/en/Services-And-Information/Pages/Environmental-Enforcement.aspx

seasons were more than doubled in comparison with seasons during previous years, in terms of the number of field personnel involved, in terms of intensity and quality of field inspections, and in terms of the level of inter-agency coordination. This, combined with the concurrent major legal and judicial reforms has had a major positive impact on the number of offences involving illegal targeting of protected birds, which has progressively declined in comparison with similar metrics during previous years.

EF2	**NBSAP Measure**: The polluter pays principle and principles of liability and redress are applied wherever environmental damage has resulted from an occupational or other activity of an operator.	**Progress:** 😐
National Actions and Outcomes Achieved: MEPA is the Competent Authority who oversees the implementation of the **"**Prevention and Remedying of Environmental Damage Regulations, 2008" (as amended). See also information on the enactment of the Crimes against the Environment Act (Chapter 522) under NBSAP measure EF4.		

EF3	**NBSAP Measure**: A National Enforcement Directorate is set up and effectively deals with curbing illegalities in Out of Development Zone (ODZ) areas.	**Progress:** ☺
National Actions and Outcomes Achieved: The National Enforcement Directorate was successfully set up within MEPA.		

EF4	**NBSAP Measure**: Environmental illegalities such as, but not limited to, the illegal alteration of water flows that is detrimental to freshwater-dependent biodiversity, illegal land conversion, as well as the illegal capture and killing of species, are addressed through strengthened enforcement and corrective action (links with EF1).	**Progress:** 😐

National Actions and Outcomes Achieved:

The Crimes against the Environment Act (Chapter 522)[114] was enacted on 12 July 2012 and transposes Directive 2008/99/EC on the protection of the environment through criminal law. In the Act, "crime against the environment" includes *inter alia*:

- the killing, destruction, possession or taking of specimens of protected wild fauna or flora species, except for cases where the conduct concerns a negligible quantity of such specimens and has a negligible impact on the conservation status of the species;
- the trading in specimens of protected wild fauna or flora species or parts or derivatives thereof, unless, it is proved to the satisfaction of the court that the conduct concerns a negligible quantity of such specimens and has a negligible impact on the conservation status of the species; and
- any conduct which causes the significant deterioration of a habitat within a protected site.

Various instances of direct action were taken by MEPA obliging offender to take corrective action in relation to illegalities ODZ. Such direct action is ongoing.

With respect to illegal capture and killing of birds, a major legal and judicial reform was implemented in two phases. In October 2013, penalties for all types of hunting-related offences were doubled, the level of legal protection of a number of bird species was raised, additional legal clarity was introduced in respect of a number of regulatory conditions (e.g. reporting requirements, obligations pertaining to licenses, etc), and an entirely new system of administrative fines was set up to relieve the justice system from considering hundreds of minor infringements that are more effectively dealt with through administrative fines, rather than tying up precious judicial resources to dealing with such offences through the Courts. In March 2014, penalties for the most serious offences involving illegal targeting of protected birds were increased even further, resulting in one of the harshest regimes in the EU. A record 97% conviction rate was achieved, with the support of

[114] http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=11918&l=1

the newly set-up Specialist Enforcement Branch within the Wild Birds Regulation Unit, which assists law enforcement authorities in prosecution. Cumulatively, these reforms resulted in a major increase in legal deterrent against all forms of bird-related crime. A series of regulatory improvements were implemented concerning licensing processes, Carnet de Chasse collection and verification, hunters' reporting obligations and other requirements. These reforms resulted in additional legal and regulatory clarity, drastic improvements in the rate of compliance with reporting and licence return obligations (over 99% of Carnet de Chasse booklets were returned within the legal deadline) and other improvements.

Infringements to the Wild Birds Protection Regulations are now faced with harsher penalties through the amendment of the "Wild Birds Conservation Regulations, 2006" by Legal Notice 341 of 2013, as follows:

- on a first conviction - a fine of not less than €500 but not exceeding €2,500 or €5,000 (depending on which regulation an offence has been committed) + the confiscation of the *corpus delicti* + suspension of any licence or permit, issued under these regulations and under Part XV of the Code of Police Laws, for a period of not less than 2 years but not exceeding 5 years;
- on a second or subsequent conviction - a fine of not less than €1,000 but not exceeding €5,000 or €10,000 (depending on which regulation an offence has been committed) or to imprisonment for a term of not less than 6 months but not exceeding 2 years, or to both such fine and imprisonment (depending on which regulation an offence has been committed) + the confiscation of the *corpus delicti* + permanent revocation of any licence or permit, issued under these regulations and under Part XV of the Code of Police Laws or suspension of any licence or permit, issued under these regulations and under Part XV of the Code of Police Laws, for a period of not less than 2 years but not exceeding 5 years (depending on which regulation an offence has been committed)
- possibility of an imposition of a Community Service Order on the offender in terms of the Probation Act;
- any person who hunts or attempts to hunt or takes or attempts to take birds where such licence has been permanently revoked, upon conviction, shall be liable to a fine of not less than €7,000 but not exceeding €15,000 and to imprisonment for a term of not less than 1 year but not exceeding 2 years

The development of national strategy for the eradication of illegal killing, trapping and trade in wild birds has been initiated. The proposal for the establishment of a Wildlife Crime Investigations Unit (WCIU) within the police force is currently being discussed. BirdLife Malta is also continuing to request the development of the Wildlife Crime Unit, which would be fully trained and equipped.

Considering the fisheries sector, provisions have been adopted to deter illegal fishing through various legislative instruments (1224/2009 Control Regulation; IUU Regulation 1005/2008; 1967/2006 GFCM; and Cap. 425 Fisheries Conservation and Management Act).

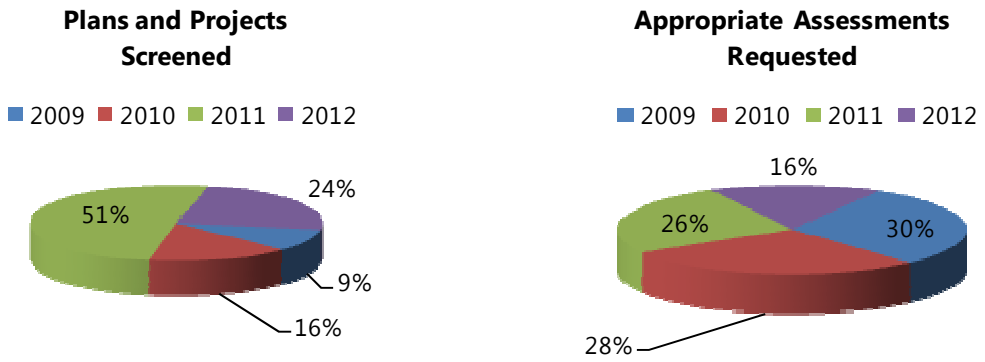
Theme 13: Environmental Assessment (Code - EA)

EA1	**NBSAP Measure**: The carrying out of environmental impact assessments (EIA), strategic environmental assessments (SEA) and appropriate assessments (AA) ensures that potential adverse and significant effects of projects, plans or programmes, and activities (including those with EU funding) on biodiversity (flora, fauna, habitats, ecosystems, protected areas etc.) are prevented/mitigated.	**Progress:** ☺

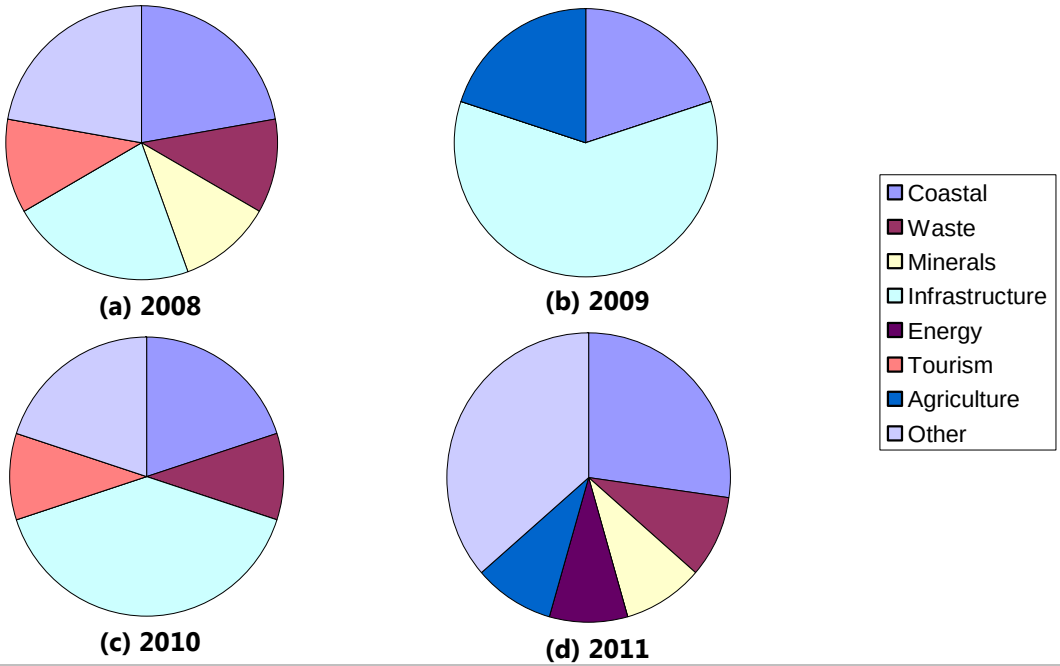
National Actions and Outcomes Achieved: The Environment Protection Directorate (EPD) within the Malta Environment and Planning Authority (MEPA) continues to carry out environmental assessments of relevant plans and projects to ensure that relevant environmental considerations, including biodiversity, are integrated in decision making processes. An overview of all of EPD's environmental assessment tools is available on the website: http://www.mepa.org.mt/permitting-ea-

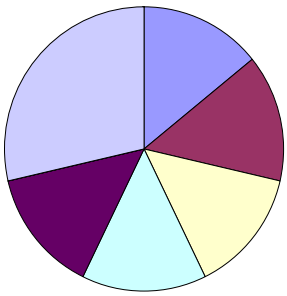
main .Between 2009 and 2012, nearly 500 projects and plans were screened for their potential impact in a Natura 2000 site, and on the species and/or habitats therein. Following the screening process, the Appropriate Assessment process was initiated for 50 of these projects and plans. An annual distribution of the plans and projects screened and the Appropriate Assessments requested is presented in Chart 18 (a & b).

Chart 18 - Distribution of (a) screened plans and projects and (b) appropriate assessments requested, respectively, by year



Between the period 2008 and 2012 various EIAs have been requested. These assessments covered various activities ranging from those related to agriculture, to waste treatment and to energy generation. The majority of the EIAs have been requested for projects linked to infrastructural development, such as dredging activities and national projects. On the other hand the years 2010 and 2011, had the highest number of EIAs requested, 10 and 11 respectively. Chart 19 (a, b, c, d & e) provide the distribution of the EIAs requested for the period 2008 to 2012.





(e) 2012

Chart 19 - EIAs carried out on a yearly basis according to various themes

EA2	**NBSAP Measure**: Environmental assessments are undertaken with due consideration of established guidelines by the CBD and other multilateral environmental agreements (MEAs) and, the Natura 2000 sectoral guidelines issued by the Commission.	**Progress:** ☺
National Actions and Outcomes Achieved: References to such guidelines are made when drawing up terms of reference for the undertaking of environmental assessments on a case-by-case basis and as deemed applicable.		

Theme 14: Research & Development (Code - RD)

RD1	**NBSAP Measure**: Working partnerships with research institutions are developed or strengthened in order to undertake targeted interdisciplinary research that improves an understanding of biodiversity in ecological, social and economic aspects, and in line with policy demand.	**Progress:** ☺
National Actions and Outcomes Achieved: There is ongoing cooperation between Government, Competent Authorities and Research Institutions for addressing gaps in knowledge via the commissioning of studies and as partners in biodiversity-related projects. Research and monitoring are essential for addressing current gaps in data. Between 2008 and 2013, the Malta Environment & Planning (MEPA) has encouraged and supported various research initiatives, and has commissioned studies and issued permits in relation to threatened and protected species. Examples of studies supported by MEPA include those on *Pinna nobilis*, and research to assess the distribution, extent, and conservation status of populations of the protected sub-endemic *Myrmecophilus*, the endemic *Armadillidium ghardalamensis* and the endemic *Gibbula nivosa* in the Maltese Islands. Acquired data was valuable in filling data gaps in the Habitats Directive Article 17 Report. Research work was also carried out by local experts, the University of Malta and various NGOs throughout the years. The areas of study were various, and included botany, entomology, ichthyology, mammalogy and vegetation surveys, amongst others. These, together with expert advice, have greatly aided in the collation of invaluable new information and the update of previous records on local biodiversity, particularly of those species listed in the Annexes of the Habitats Directive for which the Article 17 Implementation Report was prepared. In this regard, MEPA also considered in-house work in relation to surveillance and monitoring, targeting mostly protected areas and species, including Natura 2000 sites, Tree Protection Areas and sensitive species, as well as assistance by NGOs, experts, and enthusiasts. MEPA has also engaged in various LIFE projects, all of which should shed new light on various thematic areas regarding local biodiversity (see Section 2.4 of Malta's 5NR). A Citizen Science scheme was created in order to allow for data collation through public participation. MEPA is the entity which coordinates the issuance of biodiversity research permits. In view of this, reports are submitted by the permit holders in line with the conditions set in permits. In liaison with the permit holders, a good number of which being university students and NGOs, MEPA seeks to attain data and information through the research being carried out. Such		

research would be related to a specific protected area and/or species, amongst which one can mention research related to the marine environment – about which much information is required so as to be able to develop, assess and implement policy.

Since 2011, Malta commissioned annual monitoring surveys on *Streptopelia turtur* and *Coturnix coturnix* during the spring season with the aim of verifying the concentration of these species and the timing of their migration. These reports, moreover, assisted in the overall supervision and verification regime of the hunting season concerned.

In line with the Marine Strategy Framework Directive (MSFD) requirements, an Economic and Social Analysis was also commissioned by MEPA so as to highlight the use of the marine environment by the local economy as well as the pressures and impacts caused by such activities. This will eventually allow Malta to address such issues with the ultimate aim to achieve good environmental status of its marine waters by 2020. Additionally MEPA has also commissioned the standardisation of the raw data from MEDITS trawl surveys for the period 2005-2012, namely biomass data and length frequency distributions and analysed the, then standardised data. Through European Regional Development Fund (ERDF), in 2013, the development of the Marine Monitoring Programme was also initiated. With respect to the inland surface and transitional waters, in 2011 the Baseline Surveys for Inland Surface and Transitional Waters, commissioned by MEPA was published. The scope of this project was to collect robust scientific data on the principal physicochemical, hydromorphological and biological quality elements, as much as possible in line with the requirements of the Water Framework Directive. The results of the baseline surveys provided the basis for MEPA to determine the most appropriate monitoring and management approaches for these water bodies. In response to this, through ERDF funding, the Monitoring Strategy for Inland Surface, Transitional and Coastal Waters was also carried out together with the Bathymetric Mapping of the Maltese coastal waters and marine territory within 1 nautical mile from the baseline coast, obtaining detailed information regarding sea depths, and the Baseline Monitoring Survey in coastal waters covering all the biological quality elements required by the Water Framework Directive. These will aid MEPA in reaching the obligation to report the assessment of ecological status of Maltese coastal waters by 2015 in the updated Water Catchment Management Plan for the Maltese Islands.

As informed by the Malta Council for Science and Technology (MCST) the thematic areas identified in the National R&I Strategic Plan 2007-2010 have been evaluated in light of evolving R&I policy trends at European level and their linkages to available funding streams. The concept of thematic research priorities has been replaced by a more business-driven approach to innovation based on existing strengths and potential for innovation. This approach is known as 'smart specialisation'. In identifying smart specialisation areas, MCST undertook a wide array of consultations with the private and public sector, coupled with a desk-based analysis of relevant, existing macro and micro-level data. Using this approach, 'environment' did not per se emerge as an economic area of activity which merits identification as a smart specialisation area. However, sustainability considerations in R&I activities will be included as a general principle which pervades the new National R&I Strategy 2020. Additionally, several of the thematic smart specialisation areas are closely linked to environmental issues, such as the 'climate change' specialisation area and the 'resource-efficient buildings' thematic area. Thus, albeit in a new way, environment can be said to have remained a priority in the new R&I Strategy, both as a general principle and as an aspect of certain thematic specialisations for innovation.

At the University of Malta, the Centre on Environmental Education and Research (CEER) has been engaged in research in environment and sustainable development (ESD) issues since the early 90s. This research has widened understanding of ESD provision and also procured curriculum material. Also, the Department of Biology within the UoM has been involved in working partnerships with several foreign research institutions that cover aspects of biodiversity studies and research.

NGOs in Malta such as BirdLife Malta work closely with NGO Partners across Europe on matters of information exchange.

RD2	**NBSAP Measure**: Attainment of know-how of environmental technologies and use of best practices assist in the fulfilment of national compliance and implementation requirements of the EU Environmental Acquis.	**Progress:** 😐

National Actions and Outcomes Achieved: The ERFD funded project entitled "Developing National Environmental Monitoring and Infrastructure Capability", with the purpose of improving the national, environmental monitoring capacity in air; water; soil; noise; and radiation is now completed. The project resulted in:

- the drawing up of an environmental monitoring strategy for Malta;
- the design and establishment of national monitoring programmes in the areas of air, water, soil, noise and radiation;
- the compilation of baseline surveys leading to the procurement of critical environmental in the above 5 areas, and
- the delivery of environmental monitoring equipment for air, noise and radiation monitoring, information management systems (these underpin information management for all areas of environmental monitoring) and training on the use of equipment and systems delivered.

The DoB at UOM covers aspects of environmental technologies and, use of best practices assist in the fulfilment of national compliance and implementation requirements of the EU Environmental Acquis as part of study units that are included in undergraduate courses within the DoB, and as part of research projects undertaken within the department.

Teaching and research facilities at the Department of Biology have been upgraded via an ERDF funded project[115], which provided necessary laboratory and field equipment, especially in areas of applied and environmental biology and biotechnology.

Ongoing research projects are making use of state-of-the-art technologies. For instance the LIFE Bahar Project will use a research vessel equipped with a multi-beam echo sounder, Side Scan Sonar and Remotely Operated Vehicles to allow surveying of benthic habitats.

RD3	**NBSAP Measure**: Malta cooperates (e.g. by participating in research projects) with other Mediterranean Countries to identify marine areas beyond the limits of national jurisdiction eligible for designation as protected areas in accordance with international law, especially the UN Convention on Law of the Sea (UNCLOS) and taking into account of scientific guidance under the CBD.	**Progress:** 😐

National Actions and Outcomes Achieved: Malta is currently following global discussions on an International Agreement on ABNJ under UNCLOS. Malta is also currently participating in regional discussions on the identification of ecologically or biologically significant marine areas (EBSA) in the Mediterranean Region. Afore-mentioned LIFE+ funded projects such as the LIFE Migrate project will also generate data that would be relevant to complement the identification of areas warranting protection.

Theme 15: Biodiversity Monitoring (Code - BM)

BM1	**NBSAP Measure**: A national biodiversity monitoring strategy is formulated taking into account established indicators such as the EU 2010 Biodiversity Baseline and relevant updated Streamlining European 2010 Biodiversity (SEBI) Indicators as well as other national environment monitoring activities undertaken in line with requirements of EU Directives (such as the WFD and MSFD) in order to avoid duplication of	**Progress:** 😐

[115] https://investinginyourfuture.gov.mt/project/research-science-and-technology/furnishing-and-equipping-of-the-chemistry-and-biology-building-extensions-33947654

	effort, while maximising best use of resources. The implementation of such a strategy will help Malta fulfil its monitoring obligations under the EC Nature Directives and biodiversity-related MEAs in a coordinated and coherent manner.	

National Actions and Outcomes Achieved:

A long term monitoring strategy to implement the requirements of the Water Framework Directive was developed through the ERDF project on "Developing National Environmental Monitoring and Infrastructure Capability" mentioned under NBSAP measure RD2 above. The same project was used to develop a marine monitoring strategy with the aim of streamlining monitoring obligations pertaining to the marine environment the MSFD monitoring programme. These deliverables are being translated into 'monitoring factsheets' streamlining monitoring requirements emanating from marine-related policies at both regional and EU level for specific themes. Implementation of such monitoring factsheets would ensure cost-effective sustained monitoring in the marine environment that would cater for various marine-related policies.

Work on the development of a national biodiversity monitoring strategy shall commence later in 2014. However at present, the management planning process for terrestrial Natura 2000 sites identifies as a deliverable the drawing up of standardised monitoring methodologies for relevant species and habitats of Community importance within such sites. Such methodologies would in principle also be relevant for taxonomic groups and habitat types outside the Natura 2000 Network in Malta in terrestrial settings. Work also continues on surveillance and monitoring to target mostly protected area and species, including Natura 2000 sites, Tree Protection Areas and sensitive species. This work is coordinated by MEPA, and includes training of staff, who carry out the surveillance work, as well as assistance by NGOs and the general public.

BirdLife Malta participates in ringing schemes through the year and through hosting and participating in biannual bird ringing on Comino during peak spring and autumn migration periods. This allows short term changes to be studied to support a biodiversity monitoring regime.

Ecological surveys and monitoring is also commissioned to environmental consultancy agencies.

BM2	**NBSAP Measure**: A national volunteer network that carries out biological recording on selected taxonomic groups throughout the Maltese Islands is set up and supported via training.	**Progress:** NA

National Actions and Outcomes Achieved: The timeline for this measure is from 2015 to 2017 and hence progress will be reported at a later stage (2017 NBSAP review). In the interim however, MEPA launched a Citizen Science scheme to collate further data through public participation (vide http://www.mepa.org.mt/citizenscience) and informed relevant stakeholders about this initiative. Citizens and stakeholder groups are increasing volunteering in initiatives such as divers in the monitoring of marine invasive species as part of the MedPAN North Project; members of the public in the spot the jellyfish campaign and sea users volunteering in the LIFE Migrate Protect.

Along the lines of citizen science, BirdLife Malta's Sparrow Project is worth mention. This citizen science project, which has secured the required financing, aims to involve the public in mapping the location of roost sites of the native Spanish sparrow. Similarly to the afore-mentioned swift project See NBSAP Measure SH7), the public are directly involved in the collation and verification of information regarding these species. Through involving the public in projects mapping these common urban birds, it is hoped that awareness of Maltese biodiversity swill improve. These projects will also communicate ways in which these, and other birds, can be encouraged in people's gardens and other public spaces as the Maltese public takes greater ownership of the biodiversity around them (thereby also being relevant to NBSAP Measure PC1). Currently, many of these sites are vulnerable to development. These projects will also help the Malta Environment and Planning Authority, through the availability of information on important sites where disturbance can be avoided.

Theme 16: Networking & Information Exchange (Code - IE)

IE1	**NBSAP Measure**: Existing or new national fora serve as a platform to maximise the involvement of relevant stakeholders in discussions on environmental issues, as well as to assist information flow to guide decision-making and to share expertise/experiences.	**Progress:** ☺
National Actions and Outcomes Achieved: Various officially-appointed boards (e.g. the Majjistral Nature and History Park Management Board, Fisheries Board, and Pesticides Control Board) and committees (e.g. Natural Heritage Advisory Committee, ORNIS Committee, and a Scientific and Technical Committee) are currently in place to discuss and/or agree on environmentally-related issues. New committees would be set up as the need arises also with respect to coordinating the implementation of cross-cutting issues at a national level. There are also plans to set up a network between the various enforcement agencies in order to encourage improved communication and joint activities such as training, monitoring and direct actions. The Malta-EU Steering and Action Committee (MEUSAC), which falls under the responsibility of the Minister for Social Dialogue, Consumer Affairs and Civil Liberties, is *inter alia* tasked to engage civil society in the EU decision-making process and manage such a consultation process, and to discuss the impact proposed EU measures could have on Malta, its institutions, its specific sectors and ordinary citizens. Malta will introduce additional fora and/or groups which are deemed compulsory by the European Agricultural Fund for Rural Development (EAFRD) regulation as well as consider the setting up of other groups which are not compulsory but recommended by the said regulation.		

IE2	**NBSAP Measure**: Inter-departmental information exchange and cooperation is enhanced by means of direct communication channels, designation of national focal points and inter-institutional cooperation agreements, setting up an integrated environmental website as well as the setting up of inter-agency committees, where required. Such activities also result in the streamlining of responsibilities.	**Progress:** 😐
National Actions and Outcomes Achieved: Implementation of IE1 is also relevant here since existing officially appointed bodies also serve the purpose of fostering inter-departmental information exchange and cooperation. Case examples include the monthly meetings held with the Fisheries Advisory Board on various items when needed, as well as the regular meetings held by the plant protection board to discuss any ongoing discussions in relation to new pests, current pests, new legislations etc. Information on Ministries and agencies responsible for different aspects of environmental regulation and environmental enforcement in Malta is available on an integrated portal on the gov.mt website[116]. A Cabinet Committee on the Environment was also set up in 2012.		

IE3	**NBSAP Measure**: Bilateral and multilateral cooperation with other CBD Parties and EU Member States is continued to advance global and regional progress in biodiversity conservation.	**Progress:** ☺
National Actions and Outcomes Achieved: Such cooperation is ongoing including participation at key high level meetings such as The High Level Segment sessions of the 10th and 11th meetings of the Conference of the Parties to the CBD, and the UNGA. The Global Issues Directorate within the Ministry for Foreign Affairs implements its mission to enhance relations with international organisations, such as the United Nations and its agencies.		

[116] https://www.gov.mt/en/Services-And-Information/Pages/Environmental-Regulation.aspx and https://www.gov.mt/en/Services-And-Information/Pages/Environmental-Enforcement.aspx

Theme 17: Capacity Building (Code - CB)

CB1	**NBSAP Measure**: National authorities responsible for overseeing the sustainable use of resources (environment, agriculture, fisheries and water) and, for the regulation of species trade and the movement of non-native species, are well-equipped with adequate human, financial and technical means. An enabling environment is created that allows for effective conservation of biological resources, by way of capacity building including via training and continued professional development; reviewing administrative structures, where required; adopting mechanisms for adequate support in line with the CBD Resource Mobilisation Strategy, where relevant; and via a flexible and adaptable framework which promotes inter-sectoral planning, cooperation and synergy (links with FB1, EF1 and IE2).	**Progress:** 😐
National Actions and Outcomes Achieved: The Department of Fisheries and Aquaculture maintains a Risk Register, which is updated on an annual basis as part its control regime. In addition management plans exist in line with Council regulation EC1967/2006 for trawler fishery, the lampuki fishery and the lampara fishery. Capacity building is an ongoing requirement, the needs of which are assessed in line with new obligations or emerging issues.		

CB2	**NBSAP Measure**: Site managers entrusted with the responsibility of managing protected areas, where applicable, are well-trained and appropriately equipped to carry out their duties effectively and based on best practice.	**Progress:** NA
National Actions and Outcomes Achieved: The timeline for this measure is from 2015 to 2017 and hence progress will be reported at a later stage (2017 NBSAP review). However it is noteworthy that site managers participate in conferences and training abroad on their own initiative.		

CB3	**NBSAP Measure**: The mandate of environmental management partnerships/consortia is tied to environmental requirements and priorities, and to a clear set of objectives, forming part of a holistic area management plan which enables better-gearing toward area management, environmental restoration, and high-quality ODZ planting, with proper differentiation made between urban and rural landscaping, and, between landscaping, forestation and environmental restoration (links to SH8 and CC4).	**Progress:** ☹
National Actions and Outcomes Achieved: This measure will be addressed in parallel with the updating of the 2002 Landscaping Guidelines under NBSAP Measure SH8.		

CB4 → CB4	**NBSAP Measure**: Gaps in taxonomic knowledge are addressed by strengthening taxonomic expertise and urging uptake of taxonomic research (links with RD1 and CB5).	**Progress:** ☺
National Actions and Outcomes Achieved: The timeline of this measure should be more appropriately revised to express an ongoing measure since research is an ongoing endeavour. The Directorate for Quality and Standards in Education liaises with local environmental NGOs on matters related to research in the field, while the Department of Biology within the University of Malta covers aspects of taxonomic knowledge as part of study units that are included in undergraduate courses within the DoB, and as part of research projects undertaken within the department.		

Taxonomic research on entemofauna has increased is being regularly documented in the Malta Entemological Bulletin by the Malta Entemological Society, with six volumes published to date[117] which have provided detailed information on more than 1,200 different species of insects which inhabit the Maltese Islands. This information was presented in 93 different contributions made by 72 scientists (46 foreigners and 26 local). Of these 1,200 species, 335 were previously not known to exist locally mainly because of lack of specialised studies, and two species of moths were found to be new to science and formally described in this journal. Thus, this educational society is contributing enormously so as to reveal the unique biodiversity present in the Maltese archipelago[118].

An updated checklist of lichens in the Maltese Islands is currently being developed by Jennifer Fiorentino, who is a Senior Lecturer in Biology at the University Junior College.

CB5	**NBSAP Measure**: Scientific capacity in conservation biology tools for the recovery of endangered species is strengthened.	**Progress:** NA
National Actions and Outcomes Achieved: Considering the timeline of the measure progress will be reported in the 2020 NBSAP review. At this stage it is noted that the Department of Biology within the University of Malta covers aspects of conservation biology in undergraduate courses within the department, and also as part of research projects undertaken within the department.		

Theme 18: Other Sectoral Integration (Code - SI)

SI1 → **SI1**	**NBSAP Measure**: Governmental entities involved in environmental management lead by example through various initiatives and by ensuring that green policies in support of biodiversity are adopted within their portfolio.	**Progress:** 😐
National Actions and Outcomes Achieved: The development of A Green Economy Strategy and Action Plan is in progress. The National Green Public Procurement Action Plan was launched in 2011, on the basis of which targets for 18 product and service group were established, along with a series of measures to ensure their attainment. After a year of operation during 2012, just over 20%, both in number and value, of all tenders that fell within the relevant 18 product groups were found to be compliant. Over 158 government tenders worth approximately 31 million Euros were compliant with the national criteria. More information is available online[119]. The timeline for this measure should be amended to blue since this should be an ongoing initiative.		

SI2	**NBSAP Measure**: Emerging biodiversity goals are integrated into future national Rural Development Plans, tailoring action to national and local needs whilst still maintaining an economically viable agricultural activity built on sustainable production.	**Progress:** 😐
National Actions and Outcomes Achieved: Similar to this NBSAP measure is the NEP action which calls for the preparation of a policy framework for the agriculture sector to integrate biodiversity considerations into future directions for the sector by 2014. Malta is currently working on its RDP for the next financial programming period which runs from 2014 to 2020. Such RDPs are deemed important for biodiversity mainstreaming in this sector due to agri-environment measures that may benefit biodiversity. The new programme shall address the following 5 priorities: water, waste and energy; Maltese quality produce; sustainable livestock;		

[117] https://www.facebook.com/EntomologicalSocietyOfMalta
[118] http://www.um.edu.mt/news_on_campus/researchinitiatives/archive/bulletinesmdavidmifsud
[119] https://secure2.gov.mt/tsdu/gpp?l=1

landscape and environment; and the wider rural economy and quality of life. The submission to the Commission of the first draft of Malta's new Rural Development Programme is planned for early 2014 with approval and adoption of programme expected end of 2014 and then launch of new measures/schemes in 2015.
Malta's draft RDP (2014-2020) takes into account Malta's NBSAP and national biodiversity targets that are relevant to the issues addressed by the RDP. The draft SEA environment report concludes that the overall impacts of the RDP on biodiversity is largely expected to be positive. More information is provided in Sub-section 2.8.1 of Malta's 5NR.

SI3	**NBSAP Measure**: Farmers receiving financial assistance under the Common Agricultural Policy are compliant with Good Agricultural and Environmental Conditions (GAECs) and Statutory Management Requirements (SMR) in line with EU and national legislation.	**Progress:** 😐

National Actions and Outcomes Achieved: Cross-compliance guidelines were issued in English[120] and in Maltese to provide a general and useful summary to farmers of cross-compliance requirements. As for financial year 2013, the cross-compliance inspections were carried out as per Regulation (EC) 1122/2009. In 2013, just over 1.6% of farmers were subjected to on the spot controls. As a result of these controls 59 %of those farmers were found to be in breach with a minor non compliance, these individuals were not sanctioned. Approximately 7% of farmers were sanctioned with a 1% reduction and a further 7% were sanctioned with a 3% reduction. No farmers were sanctioned with a 5% reduction in 2013. The majority of those with a minor breach which did not result in sanctioning were found under SMR 7. Those individuals subjected to a 1% reduction were found to be in breach of SMR5, SMR9 and GAEC. The majority of which breaches were found under SMR5. Those sanctioned with a 3% reduction, were sanctioned under SMR4, SMR5 and GAEC, the majority of which breaches were found under GAEC.

For the programming period 2014-2020, the rules on cross-compliance comprising the statutory management requirements and the standards for good agricultural and environmental conditions are stipulated in Council Regulation (EU) No 1306/2013 on the financing, management and monitoring of the common agricultural policy[121] and pursuant to Article 93 and Annex II of the Regulation. SMRs in relation to biodiversity comprise the Birds Directive [Article 3(1), Article 3(2)(b), Article 4(1), (2) and (4)] and the Habitats Directive [Article 6(1) and (2)].

SI4	**NBSAP Measure**: Good-management practices and aqua-environmental measures for sustainable management of the aquaculture sector and for preventing inadvertent release of aquaculture species are adopted on the basis of a national strategy for aquaculture. This aquaculture strategy sets environmental, social and economic standards for this industry in Malta.	**Progress:** 😐

National Actions and Outcomes Achieved: The "Aquaculture Strategy for the Maltese Islands – Towards Sustainability 2014-2025" was adopted in June 2014.[122] One of the priority areas this Strategy placed a focus includes sustainability through improved environmental management. In this context the goal is for aquaculture operations to maintain the good quality of the coastal environment. Government will ensure this through:

- the development of an Industry Code of Good Practice;
- streamlining the existing environment monitoring system and ensuring that it recognises the link between biomass and impacts;
- strengthening the monitoring and enforcement regime for permits and licences;
- introducing the concept of fallowing particularly for sheltered areas; and
- improving the regulation of relevant farm operations including the disposal of tuna offal.

[120] https://secure2.gov.mt/MRRA-PA/file.aspx?f=2122
[121] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:347:0549:0607:EN:PDF
[122] https://msdec.gov.mt/en/Document%20Repository/Aquaculture%20Strategy%202014-25.pdf

Other focus areas that would benefit the environment are the location of aquaculture operations in designated Aquaculture Zones, subject to adherence with the carrying capacity limits established through regulatory and environmental monitoring measures and area management agreements shall be established between different operators sharing a common Aquaculture Zone.
Research and development in this sector is also ongoing.
The Blue Fin Tuna Recovery Plan is being implemented. Malta is also compliant with EC 708/2007 as Malta employs species that sourced from the local stock.
On 1 January 2014, the Common Fisheries Policy Reform came into force with binding commitments on all Member States including Malta.

SI5	**NBSAP Measure**: The principles and recommendations on integrated coastal zone management (ICZM) in the Coastal Strategy Topic Paper are developed further by way of a maritime spatial plan in line with the EU's Integrated Maritime Policy.	**Progress:** 😐
National Actions and Outcomes Achieved: An Integrated Maritime National Strategy Committee has been set in July 2013 up to develop, monitor and evaluate the implementation process of the National Integrated Maritime Policy. The first task of the committee is to identify the main themes and issues that affect directly the country in the maritime sector and to compile a consultation document. A series of consultation sessions will be held with different entities and stakeholders in the marine and maritime sector. All recommendations will be discussed among the committee and a Policy document will be complied and presented to the Ministerial Cabinet for the final approval. More information is available in the press release that launched the committee[123].		

SI6	**NBSAP Measure**: The role and importance of spatial planning as an instrument for wider biodiversity conservation is reflected in new policy on spatial planning. The latter builds on the principles of integrated land use planning and devises measures to safeguard the wider countryside from urban sprawl, to support urban biodiversity and to contribute towards the EU priorities on a Green Infrastructure (links with EN4).	**Progress:** 😐
National Actions and Outcomes Achieved: The Structure Plan for the Maltese Islands of 1990 shall be replaced by the Strategic Plan for the Environment and Development (SPED)[124]. More information is presented in Section 2.9 of Malta's 5NR. It shall provide a strategic spatial policy framework for both the environment and development up to 2020, complimenting Government's social, economic and environmental objectives direction for the same period. The process to prepare the SPED was initiated in 2011 and the document was issued for consultation until June 2014. A Strategic Environment Assessment was undertaken on the SPED by MEPA. A draft national policy document, which aims to regulate further development in Outside Development Zones (ODZ) has been drawn up and was open for public consultation. The consultation document is available from: http://www.mepa.org.mt/odz-policy		

SI7	**NBSAP Measure**: Proposals for the development of renewable energy facilities are evaluated against obligations stemming from the EC Nature Directives, through appropriate assessments and EIAs (links with EA 1 and EA2). Through site planning, mitigation and monitoring in line with guidance issued by the EU and MEAs, any impacts on wildlife (such as bats, birds and marine mammals) are minimised.	**Progress:** 😐

[123] http://www.gov.mt/en/Government/Press%20Releases/Pages/2013/July/22/pr1566.aspx
[124] https://www.mepa.org.mt/sped

National Actions and Outcomes Achieved: The National Energy Policy for the Maltese Islands[125] was adopted in 2012. It is based on five fundamental principles: 1) Efficiency and Affordability; 2) Security of Supply; 3) Diversification; 4) Flexibility; and 5) Sustainability. The SEA Environmental Report[126] on this energy policy was also undertaken. With regards to the environmental receptor on biodiversity, flora and fauna, the SEA concludes that the main impacts on biodiversity, including fauna and flora, would stem from the implementation of new projects for the provision of infrastructure. Indirect positive impacts result from reduced emissions from traffic and from the power stations if certain measures are implemented.

Malta's National Renewable Energy Action Plan[127] looks at a strategic mix of RES which includes solar energy, waste-to-energy (heat), waste-to-energy (electricity), renewable fuels, biomass and biodiesel, and land and near sea wind farms. The NREAP is being updated with the latest knowledge regarding the implementation of RES technologies on the Maltese Islands. Detailed environmental impact assessments are being undertaken on the proposals for wind farms in Malta.

Information on EU funded Projects that are related to renewable energy is available online[128]. Malta's PAF on ESI Funds indicates the type of financing support for promoting the production and distribution of renewable energy sources and for supporting energy efficiency and renewable energy use in public infrastructures, in the housing sector and the agricultural sector.

The Malta Environment and Planning Authority (MEPA) published in 2010 the guidance document entitled "Planning Guidance for Micro-Wind Turbines"[129]. This guidance document includes considerations of related impacts to bats, birds and protected areas and their mitigation. MEPA also drafted in 2014 the "Solar Farm Policy" which provides guidance for the location of new solar farms[130]. It also identifies design criteria and mitigation measures to address their potential impact. Protected areas and Natura 2000 sites are amongst the listed sites where proposals for the development of solar farms shall not be approved. The guidelines in question also mention that depending on the size and location of a ground-mounted solar farm and on its ancillary interventions, an Environmental Impact Assessment (EIA) and/or Appropriate Assessment may be necessary.

Strategic-level planning at the national and local level is also very important in view of the specificities of individual Member States. Indeed Malta's SPED addresses both the need for promoting renewable energy sources and for safeguarding the environment and biodiversity from any adverse effects resulting from land development. In Malta's case the inherent land constraints hinder the potential of certain renewable energy sources.

SI8	**NBSAP Measure**: Sustainable and responsible tourism in Malta is promoted as one of the strongholds of the local economy and is attuned with biodiversity conservation, with an overall increased trend seen in the quality of Malta's tourism offer combined with evenly distributed temporal and spatial tourist flows and in keeping with the carrying capacity of fragile ecosystems. This is achieved via the implementation of relevant actions under the national tourism policy for the Maltese Islands, and taking into account the recommendations and guidelines under the CBD thematic area "Tourism and Biodiversity".	**Progress:** 😐

National Actions and Outcomes Achieved: Hotels are considered to be the ideal promoters to foreigners and locals alike of the importance of biodiversity in the Maltese Islands. In celebration of

[125] https://www.gov.mt/en/Government/Ministries-Interim-Subsites/MECW/Documents/ENERGY%20POLICY%20December%202012.pdf
[126] https://www.gov.mt/en/Government/Ministries-Interim-Subsites/MECW/Documents/SEA%20Environmental%20Report%20Energy%20Policy%20July%202012.pdf
[127] http://ec.europa.eu/energy/renewables/action_plan_en.htm
[128] https://investinginyourfuture.gov.mt/projects/environment-climate-change-and-renewable-energy-sources-16842756/
[129] http://www.mepa.org.mt/file.aspx?f=4983
[130] www.mepa.org.mt/file.aspx?f=11943

the 2010 World Tourism Day having the theme "Tourism and Biodiversity" a number of presentations were given by MEPA officials to Maltese hotel staff informing participants on locally protected areas and their management. Moreover, on the 19th September 2010, the Malta Tourism Authority also organised a "Tourism and Biodiversity Fair" during which a number of non-government organisations displayed their own projects and promotional material related to the conservation of the environment. In addition children could also take part in a biodiversity life-sized board game, similar to snakes-and-ladders, and a quiz. At the fair, on permanent display there was also a Dolphin Photographic Exhibition and a documentary on 'Marine Biodiversity' by BICREF.

As mentioned earlier in relation to tourism in Section 2.8 of Malta's 5NR, the "Tourism Policy for the Maltese Islands (2012-2016)"[131] was launched in 2012. It reflects a consolidated and proactive policy framework, which builds on the achievements of previous policies, and it keeps constant pace with the changing trends in tourism while safeguarding the viability of the tourism sector from an economic, ecological, ethical, innovative and social dimension. The document lays out a strategic framework which enables the Maltese Islands to reach better performance, higher-value added and excellence in tourism.

A Sustainable Rural Tourism Policy has been formulated with the purpose to tap the opportunities presented by the country's rural areas for tourism whilst ensuring conservation and sustainable development principles. The policy document focuses on five main aspects which include governance structure, product development, marketing, training and employment and Gozo's potential for rural tourism.

The ERDF Funded project entitled "Wied il-Mielaħ - towards an ecologically and culturally sensitive, sustainable tourism"[132] was completed in 2010 with the purpose of improving, protecting and developing the environmental heritage and natural assets at Wied il-Mielaħ and making them more accessible especially during the winter months by upgrading rubble walls, cleaning the valley, improving the valley road, installing tourist equipment and publishing printing material to promote the geological (natural window), environmental (landscape and coast) and the cultural heritage (churches and monuments) at Għarb in Gozo.

The EU co-financed grant scheme for sustainable tourism projects by enterprises[133], is ongoing. This is a €10 million scheme, which provides, following a call for projects and a thorough evaluation process, co-financing for sustainable tourism projects by enterprises.

On 21 and 22 May 2013, Malta hosted the annual European Maritime Day Conference[134], entitled 'Coastal development and sustainable maritime tourism: an investment for blue growth'.

Malta is one of the nine participating countries in the project "MEET – Mediterranean Experience of Eco-tourism" in the framework of cross-border cooperation within the European Neighbourhood Partnership Instrument – "Mediterranean Sea" Programme (ENPI Med)[135].

The Malta Tourism Authority and the Ministry for Gozo are also working actively to attract eco-tourists such as via EcoGozo[136], the Blue Flag Programme, country walks, and hotel certification schemes, although the latter are not directly biodiversity related. In the context of EcoGozo, the aim is for the island of Gozo to become an eco-island by 2020 supported by a keen and committed sustainable community and a quality of life in Gozo improved further through education, economic development and social progress. Gozo will strive to reduce its carbon and water footprints. The eco-island foresees a sustainable, and therefore, a secure future for the island of Gozo and a healthy and successful place to live in, in equilibrium with the environment.

[131] https://secure2.gov.mt/tsdu/tourismpolicy2012-2016

[132] https://investinginyourfuture.gov.mt/project/heritage-and-tourism/wied-il-mielah-towards-an-ecologically-and-culturally-sensitive-sustainable-tourism-33947658

[133] https://investinginyourfuture.gov.mt/project/heritage-and-tourism-private-sector/grant-scheme-for-sustainable-tourism-projects-by-enterprises-33947687

[134] http://ec.europa.eu/maritimeaffairs/maritimeday/en/2013

[135] http://www.medpan.org/en/meetproject

[136] http://www.eco-gozo.com/

SI9	**NBSAP Measure**: Sustainable waste management via waste prevention, re-use and recycling results in a generally positive impact on the natural environment and is supported by increased public awareness and cooperation to adopt more resource efficient lifestyles thereby reversing trends of waste generation across the different waste streams.	**Progress:** NA

National Actions and Outcomes Achieved: The "Waste Management Plan for the Maltese Islands" [137] for the period 2014 to 2020 was adopted in January 2014. The core aim of this Plan is that of moving waste management in Malta up the waste hierarchy through increased prevention, re-use, recycling and recovery. More information is presented in Section 2.8 of Malta's 5NR.

WasteServ Ltd have published various information resources offering advice regarding waste management, and about waste management facilities in Malta. Some are even useful as teaching resources[138]. There is also a dedicated portal on waste tips[139].

Progress on the implementation of this measure will be reported in the 2020 NBSAP Review, however overall positive ongoing measures are noted in support of this NBSAP measure.

SI10	**NBSAP Measure**: The consideration of healthy and biodiverse ecosystems in protecting against natural disasters (such as floods) is integrated into relevant risk reduction and preparedness policies.	**Progress:** 😐

National Actions and Outcomes Achieved:

The Civil Protection Department leads the National Preparedness Programme.

The EU Funded National Flood Relief Project (NFRP), which commenced in 2013, is being implemented by the Ministry for Transport and Infrastructure. The project aims to target the stormwater runoff management problem in Malta by developing infrastructure to minimise the destructive effects of storm water and reduce the incidence of localized flash-flooding in built-up water courses, as well as, develop storm water catchment and re-use facilities. More information is available online[140]. Within the context of floods Malta also implements the European Floods Directive (2007/60/EC). Such implementation is entrusted to the Malta Resources Authority. This Directive requires Member States to establish a framework for the assessment and management of flood risks, aiming at the reduction of the adverse consequences for human health, the environment, cultural heritage and economic activity associated with floods in the Community. The requirements of this Directive have been transposed by the "Assessment and Management of Flood Risks Regulations, 2010". Malta prepared its Preliminary Flood Risk Assessment (PFRA)[141], which is based on the readily available information presented in the Storm Water Master Plan (SWMP), which was adopted in 2008 and NFRP. Malta is also looking into Sustainable Urban Drainage systems by means of the E2STORMED project, so that innovative storm water solutions, such as permeable pavements; the creation of detention basins to capture runoff; and rainwater harvesting initiatives are promoted at a the local community level in a cost-effective way.

Malta is currently developing a Second Water Catchment Management Plan, given that the first plan is nearing the end of its 6 year implementation cycle. In so doing, Malta is now considering the inclusion of natural water retention measures where necessary in both rural and built-up environments. Natural water retention can be achieved by using the natural morphology of the land to reduce run-off rates and increase infiltration, in-stream flow and groundwater recharge.

Approaches to implementing integrate valley management are being explored with a wide range of stakeholders. Related measures that are implemented as part of integrated valley management may

[137] https://msdec.gov.mt/en/Document%20Repository/Waste%20Management%20Plan%202014%20-%202020%20-%20Final%20Document.pdf

[138] http://www.wasteservmalta.com/wastemanagement.aspx?id=300

[139] http://www.wasteservmalta.com/wastemanagement.aspx?id=248

[140] https://investinginyourfuture.gov.mt/project/waste-management-and-risk-prevention/national-flood-relief-project-nfrp-42041344

[141] http://mra.org.mt/wp-content/uploads/2013/06/Preliminary-Flood-Risk-Assessment.pdf

include re-afforestation actions; utilisation of the natural inclination of the valley environment to enhance groundwater recharge and watercourse flow; protection of the actual water channel from any hydromorphological impacts; maintenance of watercourse buffer areas; and the removal of invasive species that compete for limited natural water supplies. Nature-based solutions within an integrated valley management application are sometimes supplemented by human intervention such as the upkeep of retaining agricultural walls.

Transport Malta has embarked on a 31 month project entitled "Oil/HNS Spill Response Capacity Building for the Protection of Malta's Seas"[142] and co-funded by EEA Grants (Programme Area 7 – Adaption to Climate Change). The project aims to address oil and HNS spill response training and revise the current version of the National Marine Pollution Contingency Plan to incorporate a section on offshore drilling risks. The project is a continuation of a previous one carried out between 2008 and 2010, also funded by EEA Grants titled "MT0010: Setting up an oil spill response capability for the protection of our seas".

One of the Actions of the NEP is to ensure ongoing updates to risk assessments of emergencies, including multiple emergencies that could occur, as well as to possible scenarios. This is in progress mainly through the implementation of the Seveso Directives in the context of dangerous substances. More information is available online[143].

[142] http://www.transport.gov.mt/ports-marinas/maritime-pollution-prevention-and-control/oilhns-spill-response-capacity-building

[143] https://www.mepa.org.mt/topics-seveso-background

Part III

Progress by Malta towards the 2015 and 2020 Aichi Biodiversity Targets and contributions to the relevant 2015 Targets of the Millennium Development Goals

3.1 Mid-term assessment of progress towards the Aichi targets

Information on the state of progress in achieving every Aichi target and related national target is provided hereunder arranged in order of the strategic goal of the Global Biodiversity Strategy. State of progress is indicated using the following legend:

☺ Excellent progress made in reaching the target, which is near being met
😐 Good progress made but further action is required to achieve the target
☹ Inadequate/insufficient progress due to action not yet being made or action still very early in its implementation

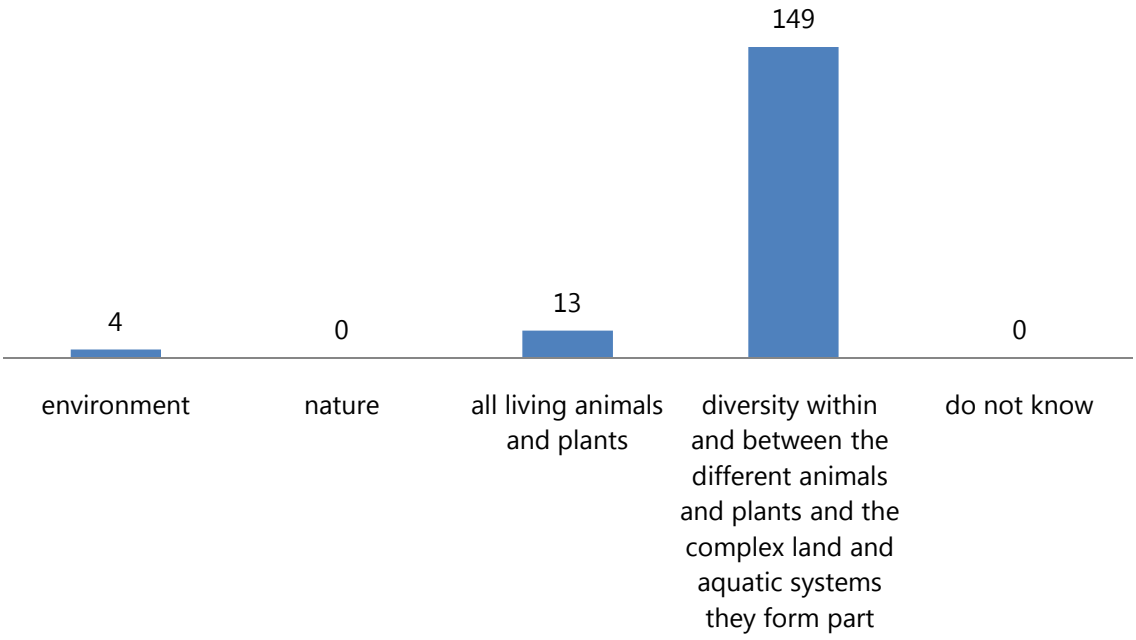
Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society

1	**Aichi Target**: By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably. *National Target: By 2020, more than 55% of Maltese citizens are aware of the term "biodiversity", know what it means and also know what steps they can take to conserve and use biodiversity in a sustainable manner.*	**Progress:** 😐
National Actions and Outcomes Achieved: Several awareness-raising and educational initiatives are being undertaken at a national level by MEPA, NGOs and schools as afore-mentioned in relation to the NBSAP Measure PA1. Such initiatives target the general public and more targeted audiences such as local councils, children, scouting-groups and socially disadvantaged. Initiatives comprise biodiversity tours in protected areas, TV educational programmes, educational programmes in schools, biodiversity talks and quizzes, as well as publication and distribution of popular material. For further information *vide* NBSAP Measure PA1 under Q9 of the CBD 5NR. The University of Malta is of the opinion that the majority of students are just aware of the term 'biodiversity' unless they have encountered it in their study. However, students at higher education level tend to understand the concept of diversity of life. Moreover, the term is clearly defined during study units taken as part of undergraduate courses within the Department of Biology. The work of environmental consultancy agencies also contributes to build awareness on biodiversity issues in the country. For instance, Ecoserv Ltd has been involved in the design and compilation of teaching syllabi and guidelines on topics related to conservation of biodiversity and Natura 2000 site management; the setting up underwater trails in Marine Protected Areas and the provision of visuals and information text for information boards designed to raise public awareness at ecologically sensitive sites.		
Indicators used: *Trends in awareness and attitudes to biodiversity as reported by Eurobarometer* - According to the findings of the Eurobarometer survey undertaken in 2013[144], 28% of Maltese respondents knew what the term biodiversity was. This translates in a 10% increase from the 2010 survey[145], where only 18% of Maltese respondents knew what this term meant. As part of the questionnaire-based survey undertaken by MEPA on biodiversity valuation (see Sub-		

[144] http://ec.europa.eu/public_opinion/flash/fl_379_en.pdf
[145] http://ec.europa.eu/public_opinion/flash/fl_290_en.pdf

section 1.2.2 of Malta's CBD 5NR). The first question in this questionnaire-based survey asked respondents as to what they understood by the term "*biodiversity*". One reply had to be chosen out of 5 options. Chart 20 reveals the number of responses for each of these options.

Chart 20 – Question – What do you understand by the term "biodiversity"?



The first four options (excluding the "*do not know*") actually represent different meanings or perspectives of the term. Usually, biodiversity is roped in with more generic terms, such as the "*environment*" and "*nature*". None of the respondents linked the term "*biodiversity*" with "*nature*", while 4 respondents out of 166 (2%) linked the term with the "*environment*". On the other hand, the term "*biodiversity*" might mean to some as referring to "*all living animals and plants*". This was the case for 13 out of 166 respondents (8%). The meaning of the term is best captured by the reply: "*diversity within and between the different animals and plants and the complex land and aquatic systems them form part*". This meaning reflects not only diversity at three levels (genetic, species and ecosystem) but also the complexity of the systems they form part. Out of 166 respondents, 149 (90%) chose this reply. This option mirrors the widely accepted definition of biodiversity that is adopted under the framework of the CBD that is, "*the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems*".

Trends in awareness of the Natura 2000 Network – In 2013 18% of Maltese heard of the Natura 2000 network and knew what this term means. In 2010 the statistics stood at only 9%, whilst in 2007 only 5% knew what Natura 2000 was[146].

Trends on public engagement - Number of MEPA biodiversity tours held in protected areas and number of people attending: MEPA held biodiversity tours in selected protected areas during the years 2010, 2011, and 2012 with 7 tours held each year. Number of attendees increased from 100 persons in 2010 to 370 persons in 2012. 21 tours were held since 2010 which were attended by a total of approximately 820 persons.

Trends in communication programmes - Number of TV appearances/programmes on biodiversity-related issues: MEPA participated from a biodiversity prospective in approximately over 160 TV programmes (e.g. Malta u lil Hinn Minnha) since 2010.

[146] http://ec.europa.eu/public_opinion/flash/fl_379_en.pdf

Number of biodiversity-related popular material published by MEPA and issued to third parties: MEPA started keeping records of the distribution of communication/educated material since April 2012. The distribution of material was supplied in response to requests such as by governmental entities, NGOs, schools, as well as internally within MEPA for distribution to third entities. Material supplied (rounded figures) during 2012 and 2013 was as follows: *April 2012 to December 2012*: 2655 A2 posters; 450 A3 posters; 1275 A4 posters; 20 printouts; 240 brochures; 10 books; and 30 booklets; *January 2013 to December 2013*: 2575 A2 posters; 1500 A3 posters; 2105 A4 posters; 530 brochures; 45 booklets; 3 books; and 200 coasters. The majority of the distributed material was biodiversity related. Nonetheless, a small number (almost negligible) of booklets/packages were also distributed concerning the i) Aarhus Convention ii) State of the Environment Report iii) Packets to new recruits on the functions of MEPA and iv) Air Quality.

Trends in education programmes and student engagement - Number of Schools participating in Environmental Projects: There has been a steady increase in schools participating in EkoSkola, Dinja Waħda projects together with other related projects such as YRE/LEAF. Indeed during 2012/2013 100 schools participated in EkoSkola, 37 of which achieved the Green Flag status; 93 primary schools participated in Dinja Waħda, 45 of which achieved the Gold Award. A total of 130 local projects participated in the YRE initiatives with four participants achieving international awards. There are plans to extend the Dinja Waħda project to secondary schools. Indeed a pilot project was held in St Theresa College GSS during 2011/2012 and 2012/2013.

2	**Aichi Target**: By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems. *National Target: By 2020, the values of biodiversity and ecosystem services, and the opportunities derived from their conservation and sustainable use, are recognised and integrated in national policies (including national accounting, as appropriate), as well as decision-making and planning processes.*	**Progress:** 😐

National Actions and Outcomes Achieved: Biodiversity and ecosystems are recognised as a long-term sustainability issue by the National Environment Policy adopted by the Government, where biodiversity is highlighted as a long-term sustainability issue and as one of the strengths in the SWOT analysis. One of the actions of the NEP is that based on the ecosystems approach, environmental change related to biodiversity will be reflected in national accounts and across sectors within the umbrella of green accounting. This is currently in discussion with MFIN. The NEP also includes actions calling for policy frameworks on the agriculture sector and another on the fisheries sector to integrate biodiversity considerations into the future directions for these sectors. A first draft for the agriculture sector is completed and is currently under internal discussion, while a draft fisheries strategy is also under discussion. As regards planning processes, SEAs and EIA's in Malta assess the effects on biodiversity in line with national and EU legislative instruments to guide policy and decision-making respectively. Moreover the objective of protecting and enhancing the quality of waters (inland surface, coastal and transitional waters) is integrated in the planning process via the consultation process carried out with the Environmental Protection Directorate on a case-by-case basis. Under the implementation of the first Water Catchment Management Plan, guidance on integrating WFD objectives concerning protected areas and water bodies into the planning process has also been drafted.

Indicators Used:

Trends in integration of biodiversity and ecosystem service values into sectoral and development policies: Biodiversity considerations are increasingly being integrated in the sectoral policies, such as on climate change adaptation, land use, water, fisheries, agriculture and rural development and tourism. Further recognition however is deemed required with regard to the link and importance between biodiversity and the various ecosystem services. The assessment and mapping of ecosystem services will help in this regard.

3	**Aichi Target**: By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions. *National Target: By 2020, positive incentives for conservation and sustainable use of biodiversity are increasingly promoted. Malta cooperates in efforts to address environmentally harmful subsidies.*	**Progress:** 😐

National Actions and Outcomes Achieved: There are no Environmentally Harmful Subsidies in place in the current Rural Development Programme (RDP) for Malta, and no such measures are foreseen for the next RDP. Malta is also in line with the Common Fisheries Policy (CFP) as well with Council Regulation (EC) No 1967/2006 of 21 December 2006 concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea (GFCM). Provisions were enacted within the mentioned Acts to eliminate any incentives or subsidies that could threaten the sustainability of stocks.

A Study on environmentally harmful subsidies was undertaken at EU level[147]. Malta is addressed as a case study[148] in the extractive industry and building sector (Indirect subsidy to rock extraction in Malta - Lack of full cost pricing). In this example, it is stated that quarrying activities have been on the rise in recent years as have the adverse environmental impacts associated with these activities, especially given the proximity of the quarries to human settlements. The stones (a limited resource of national heritage value) are extracted for free, i.e. there is no charge or tax on stone extraction that would account for the fact that this resource is finite and internalise the environmental externalities (and costs imposed on the community) associated with these activities. This also runs counter to certain some EU commitments in relation to environmental impact assessments, as well as biodiversity and health related objectives. Main options for reform of this indirect subsidy are also provided, such as the introduction of taxes and charges at levels which appropriately reflect the scarcity of the resource and adverse environmental externalities from quarrying activities, as well as alternatives such as the recycling of construction and inert demolition wastes and wastes derived from quarrying.

Information provided on target 4 is also relevant in the context of positive incentives.

Indicators Used:

Trends in identification, assessment and establishment and strengthening of incentives that reward positive contribution to biodiversity and ecosystem services and penalise adverse impacts – Trends with respect to agri-environment measures will be available when the RDP of 2014-2020 will be implemented to be able to compare it with the RDP of 2007-2013. As regards the reform of the EHS on quarrying stated above, the NEP includes the action that by 2015, an assessment on the best method for internalising environmental costs into the price of the resource is announced. Internalising these costs could encourage greater use of re-used and recycled material and reduce construction, demolition and excavation waste. There is also the intention to regulate minerals extraction operations through the introduction of environmental permitting.

[147] Withana, S., ten Brink, P., Franckx, L., Hirschnitz-Garbers, M., Mayeres, I., Oosterhuis, F., and Porsch, L. (2012). Study supporting the phasing out of environmentally harmful subsidies. A report by the Institute for European Environmental Policy (IEEP), Institute for Environmental Studies - Vrije Universiteit (IVM), Ecologic Institute and Vision on Technology (VITO) for the European Commission – DG Environment. Final Report. Brussels. 2012.

[148] http://ec.europa.eu/environment/enveco/taxation/pdf/annexes_phasing_out_env_harmful_subsidies.pdf

4	**Aichi Target**: By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits. *National Target: By 2020, main sectors that are beneficiaries of ecosystem services have incorporated biodiversity concerns into their sectoral and cross-sectoral plans, policies and programmes, as appropriate.*	**Progress:** 😐
National Actions and Outcomes Achieved: In the agricultural sector, under the current Rural Development Programme (RDP) farmers have been encouraged to go for sustainable production. Assistance was provided via financial support related to farm investments. As the application selection process was based on a points system, investments which concerned water harvest and/or retention fetched higher marks. Further support was given to farmers who voluntary have applied for agri-environmental measures aimed to increase biodiversity and reduce intensive production. Support was based on the income lost for the farmers. Moreover farmers are supported to keep on cultivating agricultural land aimed to reduce abandonment of land. In the fisheries sector, management plans have been implemented for certain types of fisheries in order to safeguard extraction beyond sustainable limits. Management Plans are based on scientific data in aid of achieving sustainable fishing activities.		
Indicators Used: *Trends in integration of biodiversity, ecosystem services and benefits sharing into planning, policy formulation and implementation and incentives:* Sustainable production and consumption as well as considerations of biodiversity issues are increasingly being integrated in sectoral policies that benefit from ecosystem services such as the provision of food and other natural resources including supporting services such as relevant to the fisheries and agriculture sectors.		

Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use

5	**Aichi Target**: By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced. *National Target: By 2020, the rate of loss of natural and semi-natural habitats of conservation value is at least halved, and degradation and fragmentation is significantly reduced. The percentage cover of "forests and semi-natural areas" has not decreased below the CORINE land cover data of 2006.*	**Progress:** ☹
National Actions and Outcomes Achieved: Policy guidance on the regulation of development in outside development zones is currently under public consultation. The objective of protecting and enhancing the quality of waters (and hence water dependent species and habitats) have been included in some measures of the first Water Catchment Management Plan (WFD). These measures pertain to the long term establishment of ecological flows in particular watercourse environments and integrated valley management.		
Indicators Used: *Trends in proportion of land affected by soil sealing:* Malta has strong land use pressures and high land use intensity in view of its inherent small size, growing population and very high population density (highest in the EU). The island's territory is 26 % artificialised and 13 % sealed. Malta has the highest soil sealing rate amongst Member States[149]. The same report mentions that land use intensity improved after 2000 with reasoning being that that the population was growing faster than artificial surface and appropriate policy measures to reduce land take were implemented. *Trends in land cover data:* When comparing land cover data for the years 2006 and 2012, there has		

[149] European Commission (2011): *Report on best practices for limiting soil sealing and mitigating its effects*. Technical Report 2011-050. 229pp.

been no change for the following:

- continuous urban fabric (CLC Code – 111) = 388.6 HA
- discontinuous urban fabric (CLC Code – 112) = 6658.3 HA
- industrial or commercial units (CLC Code 121) = 839.4 HA
- port areas (CLC Code – 123) = 231.8 HA
- airports (CLC Code – 124) = 371.8 HA
- mineral extraction sites (CLC Code 131) = 358.6 HA
- green urban areas (CLC Code – 141) = 181.1 HA
- sport and leisure facilities (CLC Code – 142) = 216.7 HA
- non-irrigated arable land (CLC Code – 211) = 121.6 HA
- vineyards (CLC Code 221) = 56.5 HA
- complex cultivation patterns (CLC Code – 242) = 1071.3 HA
- land principally occupied by agriculture, with significant areas of natural vegetation (CLC Code – 243) = 14996.6 HA
- coniferous Forest (CLC Code – 312) = 66.8 HA
- mixed Forest (CLC Code – 313) = 143.0 HA
- sparsely Vegetated Areas (CLC Code – 333) = 811.9 HA
- salines (CLC Code – 422) = 25.1 HA
- sea and Ocean (CLC Code 523) = 460941.1HA

There has been a change in the following:

- dump sites (CLC Code – 132) = From 40.7 HA in 2006 to 61.3 HA in 2012 (+20.6 HA)
- sclerophyllous vegetation (CLC Code 323) = From 4971.6 HA in 2006 to 4951.0 HA in 2012 (-20.6 HA).

The latter changes are due to the land fill classified area at Għallis/Magħtab, which increased by approx 20.6Ha which in turn means that the surrounding area classified as sclerophyllous vegetation has decreased by the same amount. The CORINE Land Cover Data of 2006 for "forests and semi-natural areas" is 19.1%, while of 2012 is (66.8+143.0+811.9+4951.0/31535) = 18.9%.

For Malta, while Corine Land Cover Change information assists with understanding land cover and monitoring large-scale changes over longer timeframes, the large scale of the grid used does not permit analysis that is sensitive enough to monitor short-term land-use change with a great deal of accuracy.[150] The Ecosystem Management Unit within MEPA is currently working on land cover interpretation following on an adapted version of CLC classes and at the scale of 10 ha. The information will be made available when Malta's UNCCD NAP is presented at the end of 2014.

Trends in development ODZ: For the purpose of this indicator, development ODZ is considered to be that which takes place outside the 1989 Temporary Provisions Schemes and that within areas of containment[151]. In 2012, the majority (135 or 36%) of permissions for development ODZ were for agriculture and fisheries, down from 168 or 38% in 2011. In 2012 permissions for new dwellings (including by conversion) and alterations to dwellings represented 12% (47) and 11% (43) of total ODZ permits granted respectively, each declining by one percent since 2011. Permits granted for infrastructure development represented 11% and 10% respectively in 2011 (49) and 2012 (38). In both 2011 and 2012 permits for development in ODZ represented 13% (3,330 in 2011 and 2,874 in 2012) of total development permits granted[152] (Source: MSDEC – Draft NEP Monitoring Report).

Trends in habitat coverage that fall within Natura 2000: Statistics on the coverage of Annex I habitats in Natura 2000 sites by habitat category group, attained from data submitted as part of the Habitats

[150] http://www.eea.europa.eu/soer/countries/mt/land-use-state-and-impacts-malta

[151] Areas of Containment are a subset of the ODZ, which are semi-urbanised areas and historically contain development commitments that have evolved over a number of years and often in an ad hoc manner (MEPA 2012a).

[152] MEPA

Directive Article 17 Implementation Report, show the percentage of habitat assessments in three classes based on coverage by Natura 2000 sites[153] (see Figure 11) Overall, 67% (20 out of 30) of the habitats assessed are 75 – 100% covered by the Natura 2000 Network, whilst the remaining 33% (10 out of 30) are 25 – 75% covered. None of the habitats assessed is less than 25% covered by the network. This is the first time that this assessment has been done, and is considered to show positive results, also keeping in mind that Malta has a high degree of sufficiency when considering the designation of terrestrial Natura 2000 sites[154].

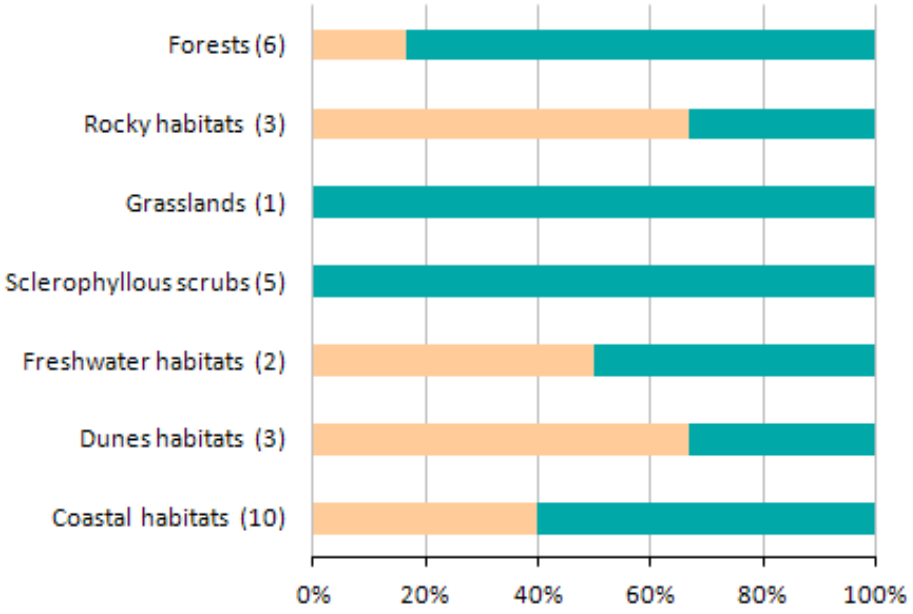


Figure 91 - % of habitat assessments in 3 classes of coverage by Natura 2000 sites

Note: The number in brackets corresponds to the number of biogeographical assessments in the habitat category.

HABITAT CATEGORY	Classes of coverage			
	0-24%	25-74%	75-100%	Unknown
Forests		1	5	
Rocky habitats		2	1	
Grasslands			1	
Sclerophyllous scrubs			5	
Freshwater habitats		1	1	
Dunes habitats		2	1	
Coastal habitats		4	6	

6	**Aichi Target**: By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no	**Progress:** 😐

[153] https://circabc.europa.eu/w/browse/53706c20-670d-4490-9d1f-ed6c9879cce5

[154] http://www.mepa.org.mt/impnatareas-pas-int-n2k-mt and http://www.eea.europa.eu/data-and-maps/figures/state-of-progress-by-member-states-in-designating-sufficient-protected-areas-to-provide-for-habitats-directive-92-43-eec-annex-i-habitats-and-annex-ii-species

	significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits. *National Target: By 2020, pressure on vulnerable ecosystems through overexploitation of biological resources is reduced by adopting sustainable practices.*	

National Actions and Outcomes Achieved: For the marine environment, pressure-targets were established for the purposes of the MSFD in relation to benthic habitats, seabirds and marine reptiles. For benthic habitats the focus is on minimising impacts from bottom-impacting activities, particularly trawling. The latter is being regulated through the adoption of Fisheries Management Plans by the Fisheries Department. Malta's target on fisheries cross-refers to the measures adopted in such management plans. The mentioned Fisheries Management Plans lay down provisions to limit overfishing through gear selectivity, temporal closures and spatial limitations for specific gear such as trawling. This ensures that practices do not jeopardize any measures that safeguard sustainability. For seabirds, the focus is on minimising disturbance while for marine reptiles the proposed target relates to the collection of data on incidentally captured turtles with a view to provide sound information for management purposes. More information is available from Malta's Initial Assessment Reports available from: https://www.mepa.org.mt/water-msfd.

Of relevance to the attainment of this target is the technical expertise provided by environmental consultancy agencies when assessing pressures on vulnerable ecosystems. For instance, Ecoserv Ltd is involved in the provision of advice on analysis of scientific survey data to determine whether commercially exploited fish / shellfish are within safe biological limits, the provision of advice on biological resource management plans and analysing data on ecosystem status at exploited and unexploited areas in Maltese waters.

Indicators Used:

Trends in fishing effort capacity - As also stated by the Scientific, Technical and Economic Committee for Fisheries (STECF) the Maltese share of commercial species landings is very low and thus any action taken by Maltese authorities to address the overexploitation will have little, if any, effect on the status of the Mediterranean stock.

Trends in by-catch of protected species – Time series of discard data is short to highlight and describe any trends present.

7	**Aichi Target**: By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity. *National Target: By 2020, areas under agriculture and aquaculture are managed sustainably, ensuring the conservation of biodiversity.*	**Progress:** 😐

National Actions and Outcomes Achieved: The national target does not include forestry since this is not practised in Malta. With respect to agriculture, farmers in Malta are encouraged to undergo a five-year contract linked to an agri-environmental measure. These measures are aimed to increase biodiversity by creating small ecological corridors, conservation of endangered species and reducing the use of pesticides during the production of the crops. In 2012, over 25% of the registered farmers had an agri-environmental measure commitment, with the total area under agri-environmental payments being 2,052.6ha. All farmers who have a Less Favoured Area commitment and or receive support under the direct aid are obliged to observe the cross compliance rules. These farmers amount to over 6000 farmers. Between 2010 and 2011, the area of land cultivated using organic farming methods increased by 17.5%, covering 25ha of the Maltese Islands in 2011. This represented approximately 0.21% of total agricultural land and 0.22% of Utilised Agricultural Area (UAA). In 2011 there were 15 certified organic producers in the Maltese Islands. See also implementation progress of NBSAP Measure SI3.

Malta's Aquaculture Strategy places emphasis on the development of closed cycle species' aquaculture. The government of Malta is working to promote aqua-environmental aquaculture and foresees a shift to offshore aquaculture and environment friendly aquaculture through sustainable

methods.

Commissioned sampling and monitoring that is undertaken by environmental consultancy agencies is worth mentioning here such as the sampling and analysis of soil and agricultural products, the monitoring of water and sediment quality at aquaculture cage installations around the Maltese Islands and the monitoring benthic diversity in the vicinity of aquaculture cages around the Maltese Islands as is undertaken by Ecoserv Ltd.

Indicators Used:

Trends in pressures from aquaculture: There are 9 off-shore aquaculture sites in Malta. Most sites are located in open, exposed waters whilst the more sheltered sites are utilized for nursery production or broodstock holding. Malta's MSDF Initial Assessment on Nutrient Enrichment[155] provides an indication of the input loads of total nitrogen, total phosphorous and total organic carbon from four fish farms operating in Malta during the period 2007-2011. An average of 319,038kg of total nitrogen, 53,010kg Total Phosphorous and 653,300kg Total Organic Carbon were released per year by the four offshore fishfarms. Such large quantities of dissolved nutrient can affect the water quality, which however is curbed via the efficient nutrient dispersion in such exposed areas. The report on the basis of documented studies mentions that on the basis of environmental monitoring of aquaculture activities in the Maltese Islands carried out since 1991 to date, despite the fact that the negative impact to the benthic environment found directly beneath the fish cages is well known, very little impact has been observed in terms of water quality. The impacts of aquaculture on marine quality vary on the type of farm, i.e. for closed cycle species (i.e. Sea bass and sea bream) and tuna penning as further detailed in the report.

Trends in area of agricultural ecosystems under sustainable management - In the last five years the total utilised agricultural area occupied by organic farming has remained stable. The total area of agricultural land under agri-environment schemes increased from 1831.0ha in 2011, to 2052.6ha in 2012.

Trends on HNVF: This data is not yet available.

Trends in Birds common or characteristics of farmland/Farmland Bird Index: Farmland birds (such as short toes larks and corn buntings) are an indicator of the quality of the rural environment and change of elements of biodiversity in agroecosystems. BirdLife Malta was contracted to carry out the Farmland Birds Index in 2013, following on from the baseline survey of 2008. This has been partially incorporated into the Rural Development Programme.

8	**Aichi Target**: By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity. *National Target: By 2020, the implementation of effective measures to address pollution (including from excess nutrients) in line with the requirements of established legislation, is showing signs of a decreasing trend in current pollution levels, where feasible.*	**Progress:** 😐

National Actions and Outcomes Achieved: Nitrates are the major water pollutant caused by agriculture activities, mainly by leaching from organic manure and inorganic fertilisers and percolation in the water table. Measures included under the Nitrates Action Programme 2011 and the Water Catchment Management Plan 2011 (The former tackling agricultural sources, the latter dealing with agricultural, industrial and municipal sources) are currently being implemented. Nutrient monitoring under the Water Framework Directive and Nitrates Directive has also been carried out in 2012/2013. Under the latter eutrophication risk assessments in selected bays prone to nutrient enrichment have also been carried out.

The objective of protecting and enhancing the quality of waters (and hence water dependent species and habitats) have been included in some measures of the first Water Catchment Management Plan (WFD). These measures pertain to the long term establishment of ecological

[155] https://www.mepa.org.mt/file.aspx?f=10347

flows in particular watercourse environments and integrated valley management.

In addition monitoring of protected inland waters (including sediment matrix monitoring) has been carried out and further monitoring of water quality is expected to be carried out in the future. In the case of coastal waters, current WFD monitoring programmes cover current water quality in marine protected areas (within the 1 nautical mile boundary).

When considering the marine environment, Malta as part of its initial assessment in line with the Marine Strategy Framework Directive drew up a report on nutrient enrichment in the marine environment. This report provides a description of the levels of nutrients and the occurrence and effects of nutrient enrichment in Malta, with a view to determine status in terms of this pressure, in line with Article 8 of the EU Marine Strategy Framework Directive. The assessment of the GES for nutrient enrichment was hindered due to limitations in availability of long-term trend data. While the current data generated by the baseline surveys carried out in line with requirement of the Water Framework Directive, between May and November 2012 points towards a low nutrient scenario in coastal waters, hence 'good' status in terms of nutrient levels, this has yet to be confirmed for localised areas (such as inlets and bays) during seasons which have not yet been covered by the WFD monitoring regime. The MSFD IA Report on water column habitats is also relevant[156]. This report states that nutrient and organic matter enrichment is considered to be the most significant pressure affecting water column habitat types. This type of pressure in Malta is mainly associated with sewage outfalls and overflows, port operations and agricultural runoff.

All effluents discharged to the marine environment require an environmental permit, which contains emission limit values for substances discharged into the water and all other environmental requirements, thus ensuring an integrated approach. Amongst the activities that have been identified as requiring an environmental permit due to discharges to the marine environment, are sewage treatment plants, land-based fish farming and aquaculture activities and any other direct discharges into the marine environment.

The Aquaculture Strategy for Malta includes improved environmental monitoring that will ensure carrying capacity limits for each aquaculture area. This will provide clear Environmental Quality Standards (EQS) by which adverse impacts can be judged, and an Allowed Zone of Effects (AZE) over which such impacts can be allowed.

The work of environmental consultancy agencies is important when assessing the effectiveness of measures being implemented. For instance, Ecoserv Ltd carries out chemical analyses of marine water, inland surface waters, leachates from landfills, treated sewage effluents, groundwater samples and rainwater run-off samples to detect and monitor pollutants.

Indicators Used:

Trend in emission to the environment of pollutants relevant for biodiversity: For SO_2, the power generation is the largest emitter and from 2010 onwards Malta shifted to 0.7% S HFO in order to comply with the 9kton ceiling established by the NEC Directive. In addition compliance with this Directive has also obliged the power generation sector to reduce emissions of NOx too and in fact in 2011 Malta achieved compliance with the 8 kton NOx ceiling.

Trends in Waste Generation (Source: Waste Management Plan 2014-2020):

Municipal Solid Waste: Data for municipal solid waste recorded over the period 2004 to 2011 (Figure 12) suggests Malta's reliance on landfills as the main treatment option for this waste stream. The levels of recycling were quite steady throughout this period, with a decrease registered in 2008 and 2009 which may be attributed to the upgrading of the Sant Antnin Solid Waste Treatment Plant in Marsascala, which neared its full operational capacity in 2011.

[156] https://www.mepa.org.mt/file.aspx?f=10335

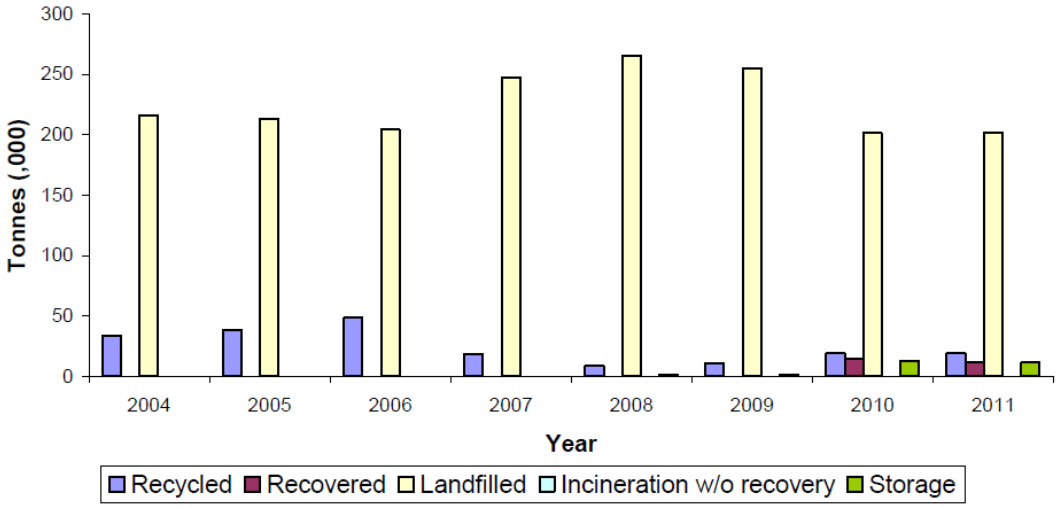


Figure 12 – Graphical representation of MSW management over the period 2004-2011

Biodegradable Municipal Waste: An overview of the total biodegradable municipal waste generated and managed over the period 2004 to 2011 is provided in Figure 13. It is evident that in 2011 the country still relied on landfills as the main disposal route for this fraction.

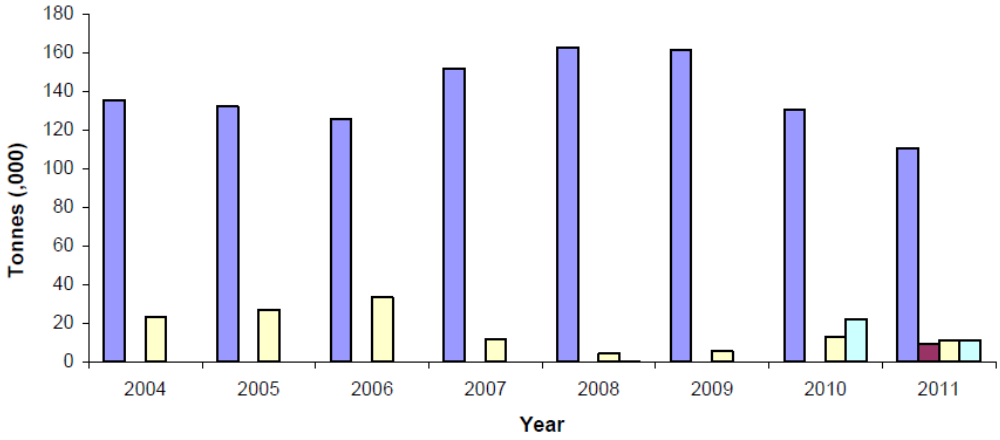


Figure 13 – Graphical representation of BMW management over the period 2004-2011

Commercial and Industrial Waste: Data for C&I waste recorded over the period 2004 to 2011 is presented in Figure 14. As at 2011, 89% of total C&I waste generated was recycled and 30% was landfilled.

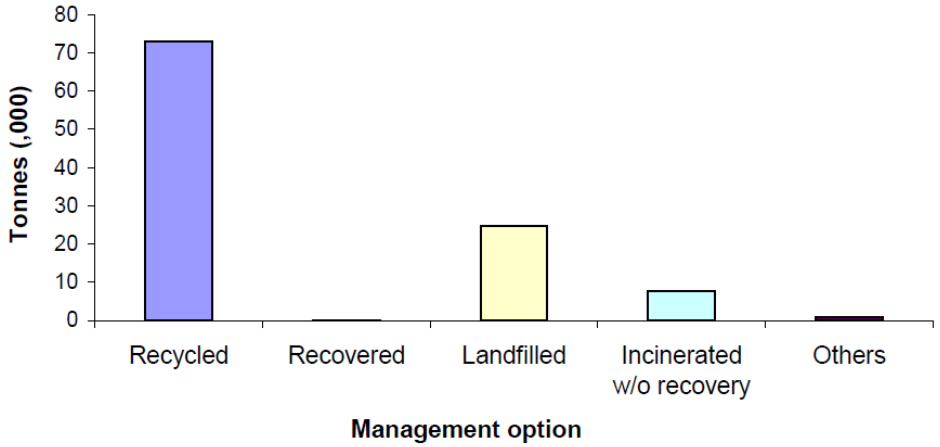


Figure 14 - Graphical representation of C&I waste management in 2011

Construction and demolition waste: Construction and demolition waste constitutes the largest share of waste generated in the Maltese Islands. The generation of this waste stream is highly dependent on the construction industry. The main C&D waste disposed of in inert landfills is inert construction and demolition waste and clean geological material excavated during the construction works. Spent quarries, which have been for long accepting inert C&D waste, were permitted as inert landfills, in spite of the fact that such waste material was being used for rehabilitation purposes. The latter is considered as a backfilling operation in accordance with the definition laid down in Commission Decision 2011/753/EU, whereby backfilling is a recovery operation where suitable waste is used for reclamation purposes in excavated areas or for engineering purposes in landscaping and where the waste is a substitute for non-waste materials. In this context, backfilling spent quarries, together with recycling recyclable C&D waste should aid Malta achieve its 2020 target of recovering 70% inert construction and demolition waste. Figure 15 represents a graphical representation of C&D waste management in 2011.

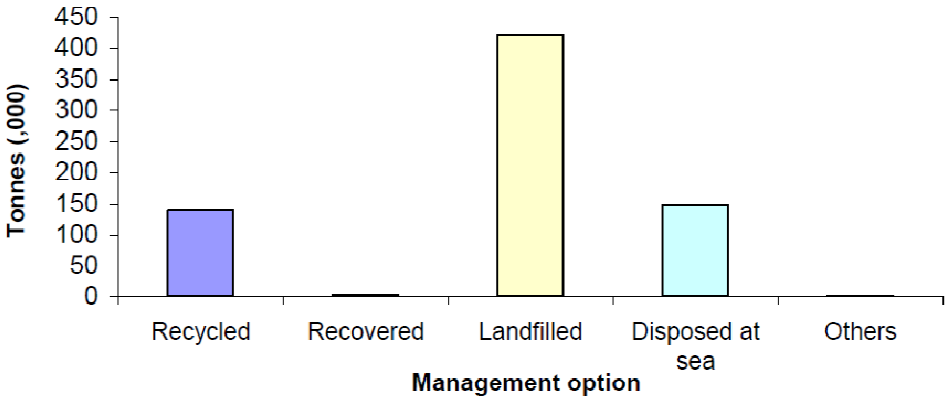


Figure 15 - Graphical representation of C&D waste management in 2011

Trends in Recycling: Figure 16 illustrates the packaging waste recycling rate (% per yr) for the period 2004 to 2011. Malta attained an overall recycling rate of 42.3% in 2011. A minimum overall recovery target of 47% for 2011 was not achieved in terms of EU legislation. The main problems hindering effective implementation are twofold: (i) not all producers are shouldering their responsibility and (ii) a lack of separation of dry recyclables at household level. Malta has strived to achieve better recycling targets through capacity building within the competent authority targeted towards the compliance of producer responsibility obligations namely those related to packaging and packaging waste. As a result of this the number of producers registered with MEPA increased significantly, and

the members in the authorised compliance schemes has increased considerably. However, it is still considered that a number of producers are free-riding the system and more efforts are evidently required to bring them in line with their obligations.

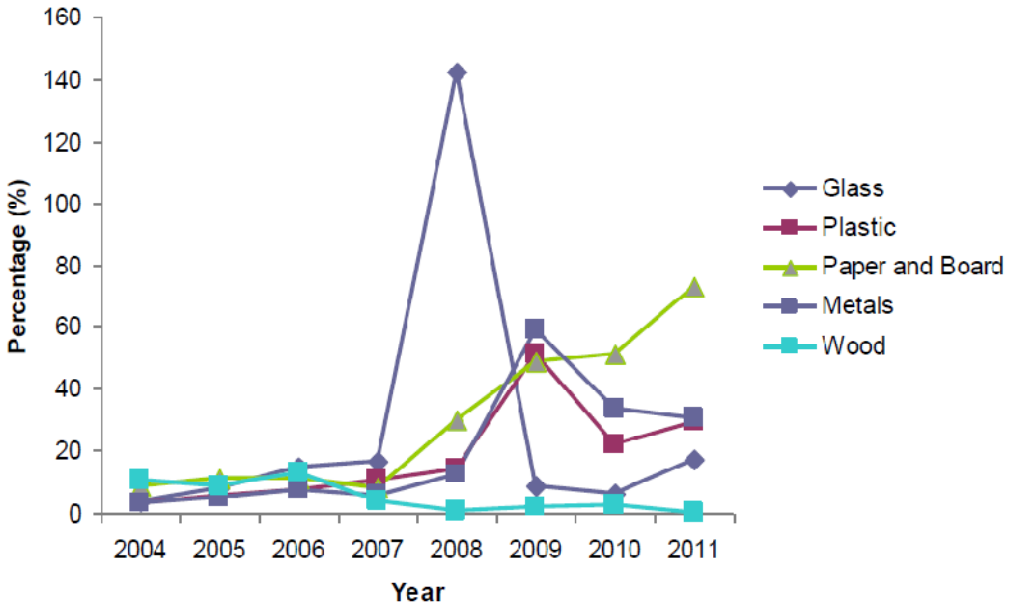


Figure 16 – Packaging waste recycling rate (% by year)

Trends in proportion of wastewater discharged after treatment: All municipal wastewater is now being treated and second class treated wastewater is currently being discharged from wastewater treatment plants.

Trends in water quality in aquatic ecosystems – The WFD coastal water monitoring results of 2012/ 2013 indicate the following water quality status indicators: Biological quality elements (i.e. macroalgae, *Posidonia oceanica*, benthic invertebrates and phytoplankton) at most of the monitoring stations under investigation were found to be in high status. A moderate status was attributed to the SE coast of Malta, where moderate/poor results were encountered in the harbour regions (Marsamxett, Grand Harbour and in the vicinity of the Marsaxlokk and Marsascala harbours). The classification of chemical status of Maltese coastal waters resulted good for all parameters monitored in water, except for mercury which was the most common metal detected in the water column from all the sampling stations. All measured mercury concentrations were found to exceed the annual average EQS of 0.05µg/L. The encountered mercury concentrations in water do not necessarily represent a pollution problem, and long-term data is necessary for an adequate assessment of background concentrations and interpretation of the status of the water column in Maltese waters. In the case of priority substances measured in sediments, the monitoring results show high concentrations of mercury, lead, copper and chromium at one station located off Pembroke and at two monitoring stations along Xgħajra. Elevated levels of Polyaromatic Hydrocarbons (PAHs) were measured in the Grand Harbour and Marsamxett. In the case of the analysis for certain chemicals in biota, the marine seagrass *Posidonia oceanica* was confirmed as a suitable bio-indicator for Maltese coastal waters up to 40m depth. Concentrations of hexachlorobenzene and hexachlorobutadiene were in all cases below detection limits, while concentrations of mercury were detected in all stations at comparable levels to those measured at pristine Mediterranean sites. In the case of inland surface and transitional waters, the studies undertaken during the years 2011 to 2013 provide a very short-term representation of the environmental conditions of the small inland surface waters of the Maltese Islands and the need for further monitoring within all of the inland sites is clearly evident. These studies confirmed that each water body is inherently different from any other and to date the ecological status of these waters has not yet been defined. However the studies confirmed that these sites are highly impacted in

terms of nutrient contamination, hydromorphological alterations, and alien species. Chemical contamination in these water bodies mainly pointed to lead as the chemical in these inland surface waters with the highest level of ecotoxicological significance. Its levels exceeded most guideline values in the water bodies of Wied il-Lunzjata and Il-Qattara. Its occurrence in sediments was mostly correlated with urban sprawling indicating that its main local sources are urban rather than industrial in origin. The lead levels in water were more moderately correlated with the extent of natural vegetation. It was then concluded that there may be more than one type of source of release for this contaminant including bird hunting.

Trends in level of nitrates in groundwater: Nitrates in groundwater result from anthropogenic activities, mainly the application of nitrate-rich fertilisers, which leach into the aquifer system. In 2011, nitrate levels exceeded the EU limit value of 50mg/l in 11 out of 15 of groundwater bodies. In 2010 nitrates also exceeded the EU limit value in 11 out of 15 groundwater bodies. The highest nitrate concentration (488mg/l) was again recorded at Pwales coastal groundwater body, increasing by 28.9% since 2010 (Figure 17). The highest value in the perched aquifer was recorded at Żebbuġ at 213.5mg/l. Nitrate concentrations in the mean sea level aquifer systems were also high. In 2011 the mean nitrate level at the Malta mean sea level groundwater body was 64.2mg/l, down from 70.2mg/l in 2010, and indicating that the nitrate levels in this aquifer are relatively stable. The mean level recorded at the Gozo mean sea level groundwater body decreased slightly to 47.5mg/l. In line with the Water Framework Directive (WFD), Malta is bound to achieve a 50mg/l limit value for nitrates by 2015 (Source SOEI 2010-2011).

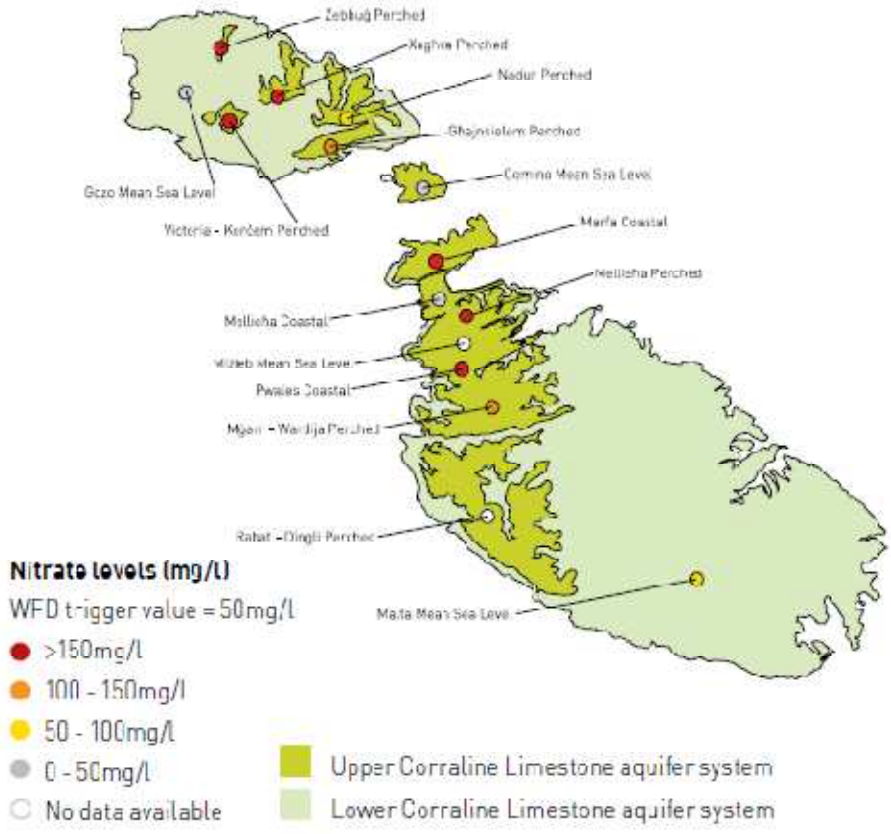


Figure 17 – Nitrate Levels in Groundwater – Source State of Environment Indicators 2010-2011

Trends in level of chlorides in groundwater: Chloride concentrations in groundwater result from sea-water intrusion, as well as over-abstraction. Chloride levels are measured against 3 separate threshold values, which were developed as part of the implementation process of the WFD, and which take into consideration parameters related to sea-water intrusion, anthropogenic pollution

and geology. The threshold values are: 1000mg/l for mean sea level groundwater bodies, 500mg/l for coastal groundwater bodies, and 210mg/l for perched groundwater bodies. These threshold values also take into consideration specific 'use-requirements' (such as potable, irrigative, etc) as well as the natural background characteristics of each groundwater body. In 2011 (refer to Figure 18 below) the highest average chloride concentration was recorded at Pwales coastal aquifer (2,995mg/l), which registered a 28.4% increase since 2010. The lowest average concentration was recorded at the Nadur perched aquifer (91mg/l), where the average concentration also increased since 2010. During this period, 6 out of 8 perched groundwater bodies exceeded the threshold value, 1 more than in the previous year. The limit value for the coastal aquifers was exceeded in all groundwater bodies, while the limit value for the mean sea level aquifers was not exceeded in any of them, similar to 2010. (Source: SOEI 2010-2011).

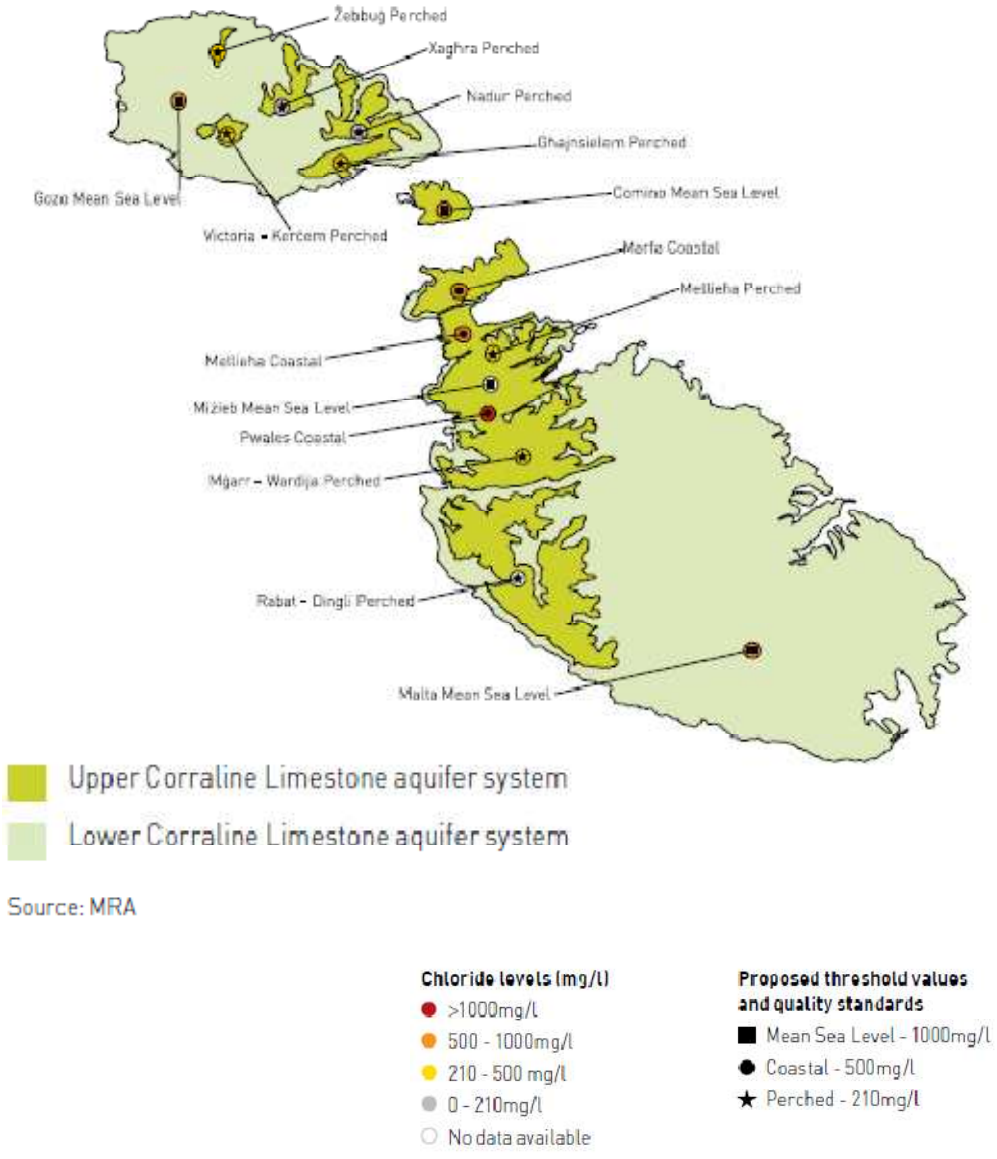


Figure 10 – Chloride Levels in Groundwater – Source State of Environment Indicators 2010-2011

9	**Aichi Target**: By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment. *National Target: By 2020, measures are in place to prevent, in so far as practical, the introduction and establishment of new invasive non-native species, while those that are established are identified and prioritised for eradication or control, where feasible.*	**Progress:** 😐

National Actions and Outcomes Achieved: For information on relevant national actions see response provided for NBSAP measures BI1 to BI4 under the theme on biological introductions of Malta's NBSAP.

For the marine environment, this NBSAP target was reinforced through the adoption of a similar target for the purposes of the EU Marine Strategy Framework Directive, in line with its Article 10. In order to facilitate the achievement of this latter target through management of vectors/ pathways, a second target calling for the assessment of the effectiveness of current measures targeted at the prevention of introduction of non-indigenous species was also established. These two targets will pave the way for the implementation of management measures targeted at the prevention of the introduction and establishment of alien species in particular those that are invasive.

MEPA also participated in the EU co-financed MedPAN North project. One of the activities of this Project involved the gathering of data via surveys for selected marine alien species in Malta's five Marine Protected Areas (MPAs) with the involvement of divers and assisted by the Department of Biology within the University of Malta. The first survey was run in January 2013, with approximately thirty voluntary participants, fifteen surveys were carried out. The second survey was run in June. The most sighted species were *Caulerpa racemosa var. cylindracea*, *Asparagopsis* spp., *Siganus luridus* and *Lophocladia lallemandii*. The results show that different species were sighted in January to those sighted in June except for the *Caulerpa racemosa and Asparagopsis* spp. which were sighted in both surveys on three different occasions. It is suggested that sightings of the invasive species were not alarming and do not call for immediate measures, however further consultations and investigation is suggested to establish as to whether there has been an increase of these sightings when compared to past studies, after which management measures may be considered.

Indicators Used:

Number of worst IAS and Trends in number of invasive alien species: There is an increasing trend of alien species introductions in particular the marine environment as verified by records being documented in scientific literature. As part of the MSFD Initial Assessment, a review of 56 non-indigenous species (NIS) recorded from the Maltese waters has been carried out. The NIS composition was as follows: phytobenthos or macroalgae - 10 species; zoobenthos (including crustaceans, echinoderms and molluscs) - 33 species and ray-finned fish - 13 species. The establishment success of the recorded NIS is as follows: 52% as 'established' or possibly so, 34% as 'casual' and 14% as 'questionable'. Out of the 29 species that are established, 8 of these are also invasive in Maltese waters (28%). Out of the 56 NIS considered in this review, 26 species are listed as invasive or potentially so in the Central Mediterranean Sea (Zenetos *et al*., 2010) while 20 species are listed amongst the 100 Worst Invasive Species in the Mediterranean (Streftaris & Zenetos, 2006). More detailed information is available in the MSFD IA report on non-indigenous species[157]. Since the carrying out of the review of NIS under the MSFD Initial Assessment, new records of marine alien species have been made. These are the red-throated sea squirt (*Herdmania momus*)[158], and additional species of alien fish - the cocoa damselfish (*Stegastes variabilis*), the dory snapper (*Lutjanus fulviflamma*) and species of *Abudefduf*[159].

Trends in invasive alien species pathways management - Since Malta entered the EU, there has been

[157] https://www.mepa.org.mt/file.aspx?f=10344
[158] http://www.um.edu.mt/news_on_campus/researchinitiatives/archive/anothermarinealieninourmidst
[159] http://www.um.edu.mt/news_on_campus/researchinitiatives/archive/newaliendeclininglocalspecies

the presence of invasive alien species due to free trade being in the EU such as the Red Palm weevil (RPW) on Palms, *Tuta absoluta* on tomatoes and Citrus Tristeza Virus on Citrus.

10	**Aichi Target**: By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning. *National Target – See target on climate change below.*	**Progress:** 😐
National Actions and Outcomes Achieved: The EU Annex I Habitat Type - 1170 Reefs under the Habitats Directive is afforded legal protection in Malta and is covered by marine protected areas. The current distribution of 170km^2 (utilising 1x1km grid cells presence/absence method) is based on various assessments related to the distribution of *Cystoseira* spp. and *Lithophyllum lichenoides*. Known records for *Astroides calycularis* and *Dendropoma petraeum* were also considered. Coral species are also afforded strict protection through national legislation. Pressures on these reef habitats/communities such as fishing and harvesting aquatic resources; discharges and penetration/disturbance below surface of the seabed are deemed of medium importance, while depositing of dredged deposits is of low importance. As documented in Malta's Initial Assessment in line with the MSFD requirements (Chapter on Marine Acidification – http://www.mepa.org.mt/file.aspx?f=10774), the marine acidification process has not been specifically assessed in Malta and relevant data is only available with respect to pH of seawater. The most recent pH data is that collected as part of the EU Water Framework Directive baseline surveys undertaken in 26 stations within WFD coastal water bodies during the period May-November 2012[160]. Results show that pH did not vary significantly across stations. Mean pH calculated for each station for the period May-November 2012 ranges between 7.84-8.05 with a minimum value across all samples of 7.6 and a maximum value of 8.4. Malta will be seeking sustained monitoring in this regard to be able to assess trends in pH of seawater.		
Indicators Used: *Trend in Condition/Status of Reef Communities in Maltese waters* - Assigned an unknown status in 2007 and overall favourable conservation status in 2013 when considering the Article 17 report prepared as required under the auspices of the EC Habitats Directive.		

Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity

11	**Aichi Target**: By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes. *National Target: By 2020, Malta's 13% land area covered by terrestrial Natura 2000 sites is maintained, and Malta's sufficiency in the designation of key marine biodiversity areas is improved through a representative network of marine protected areas.*	**Progress:** ☺
National Actions and Outcomes Achieved: Malta has maintained its 13% land area covered by terrestrial Natura 2000 sites and has designated four new marine protected areas in 2010. Additional designations in the marine environment will be subject to findings of ongoing LIFE projects (Life		

[160] CIBM and Ambiente SC. 2013. Development of Environmental Monitoring Strategy and Environmental Monitoring Baseline Surveys – Water Lot 3 – Surveys of Coastal Water – November 2012. ERDF156 - Developing national environmental monitoring infrastructure and capacity

Baħar, Life Seabirds and LIFE Migrate). More detail on these actions is provided earlier in the report.

Indicators Used:

Trends in coverage of protected areas: Increasing trends noticeable in view of additional designations

Trends in extent of marine protected areas, coverage of key biodiversity areas and management effectiveness: Such trends will be elucidated on completion of ongoing LIFE projects that deal with the marine environment. As regards management effectiveness see the results of the MedPAN North Project.

12	**Aichi Target**: By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained. *National Target: By 2020, the risk of local extirpation of known threatened species has been reduced, with 30% of the species of European Community Importance in the Maltese territory having a favourable or improved conservation status.*	**Progress:** ☺

National Actions and Outcomes Achieved: Malta continued implementing regulations affording protection to threatened species. More detail is provided in relation to the NBSAP Measures on species.

Indicators Used:

Trends in conservation status of species on Community Interest: Since its last national report to the CBD, Malta carried out its second assessment of the conservation status of species of European Community Importance that are found in Malta in compliance with reporting obligations of the EC Habitats Directive. Overall there is an increase of 20% of species being in a favourable conservation status. Such an increase is mostly due to more accurate data or due to the use of different thresholds, rather than actual genuine changes. Overall, 21 out of the 49 species have a favourable (19) or genuinely improved (2) conservation status (i.e. 43%). This data is based on those 49 species which were reported both in 2007 and in 2013. On the other hand, according to the findings of Malta's latest report in line with Article 12 of the Birds Directive (drawn up on the basis of literature review and utilising publications such as Malta's Breeding Bird Atlas), 14 of the species/populations assessed had a positive population trend throughout both the short- and long-term interims (17 species/populations had positive populations trends during the short term trend, whilst 18 species/populations had positive population trends during the long term-trend). More detail is provided in Sub-sections 1.3.1 and 1.3.2 of Malta's Fifth National Report (5NR).

Trends in the number of CITES permits issued: In 2013 – 113 CITES import/export permits; In 2012 - 95 CITES import/export permits; In 2011 – 81 CITES import/export permits; In 2010 – 73 CITES import/export permits - Therefore demand is increasing every year.

Trends in illegal capture & killing of protected species: Assessment of enforcement statistics for bird-related crime during 2013 spring hunting and autumn hunting seasons indicates a decline in the number of incidents concerning illegal capture and killing of protected birds in comparison with the corresponding data for 2012 (Data is available up to 7th October 2013). Increase enforcement presence in the field has, on the other hand, resulted in the increased disclosure of minor offences in comparison with 2012.

13	**Aichi Target**: By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimising genetic erosion and safeguarding their genetic diversity. *National Target: By 2020, the status of crop and livestock genetic diversity in agricultural ecosystems and of wild relatives has been safeguarded and improved, where feasible.*	**Progress:** 😐

National Actions and Outcomes Achieved: See information provided for the NBSAP Measures under the thematic area on genetic resources and diversity. Under the current agri-environmental

measures, farmers receive support for the conservation of ancient trees and local livestock breeds. Farmers are requested to keep and maintain these species and furthermore livestock breeders are recommended to increase the herd. More information is provided in relation to NBSAP Measure GR1 also in relation to the EAFRD project "The Study and Sustainable Conservation of Varieties of Plants" is an initiative of the Plant Health Directorate.
Indicators Used: *Trends in genetic diversity of cultivated plants, and farmed and domesticated animals and their wild relatives*: The local bovine species have increased. *Trends in number of effective policy mechanisms implemented to reduce genetic erosion and safeguard genetic diversity related to plant and animal genetic resources:* No data available on trends.

Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services

14	**Aichi Target**: By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable. *National Target: By 2020, vulnerable ecosystems that provide essential services are safeguarded, with at least 15% of degraded ecosystems restored, while 20% of the habitats of European Community Importance in the Maltese territory have a favourable or improved conservation status.*	**Progress:** 😐
National Actions and Outcomes Achieved: The PARK and Initiatives Directorate implements afforestation projects in various sites in order to create areas for habitat restoration, recreation and to contribute to a healthy environment. Management and restoration of habitats is integrated in the management plan framework for protected areas. Work on Malta's prioritised restoration framework is currently based on the restoration targets set by Natura 2000 sites'		
Indicators Used: *Trends in the condition of selected ecosystem services:* Malta is as yet to carry out a detailed assessment and mapping of its ecosystem services. *Trends in area of degraded ecosystems restored or being restored:* Data not currently available. Trends *in conservation status of habitats on Community Interest:* When considering terrestrial habitats, there is an overall improvement in conservation status in 2013 when compared to 2007. There was 1 genuine change while in the case of others there were changes due to use of more accurate data or improved knowledge. 11 habitat types had no actual change in conservation status. When considering the marine habitat types, only 1 had been assessed in 2007 (as favourable); in 2013 all 4 marine habitat types were assessed, and all have been defined to have a favourable conservation status. More detail is provided in Sub-section 1.3.4 of Malta's 5NR.		

15	**Aichi Target**: By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification. *National Target: By 2020, the impacts of climate change on ecosystems have been reduced, in so far as feasible and, mitigation and adaptation responses to climate change that support and conserve biodiversity have been agreed and are being implemented*	**Progress:** 😐
National Actions and Outcomes Achieved: See implementation of NBSAP measures under the thematic area on climate change. Climate change mitigation measures are applied in line with EU and transposing legislation. Malta adopted its National Climate Change Adaptation Strategy.		

Adaptation measures that help build/maintain ecosystem resilience are afforestation projects and restoration measures as part of protected area management.

Indicators Used:

Status of GHG emissions and main contributors in Malta: Latest figures are communicated in the 2013 report[161] which contains national GHG emission estimates for the period 1990-2011. The following information is extracted from the report in question. The total GHG gross emissions amounted to 3021.2 Gg CO_2 eq in 2011, an increase of 50.6% compared to 1990. CO_2 is the largest contributor to national emissions with 87.2% share of total gross emissions in 2011; this is the case throughout the time series. CH_4 is the second highest emitted greenhouse gas representing a share of 7.4%, with lesser shares for the fluorinated gases and N_2O at 3.6% and 1.7% respectively. Looking at the whole time series (1990-2011) CO_2, CH_4 and fluorinated gases have been increasing while N_2O has been seen to decrease in the past years. Energy is the largest contributor of GHG emissions in Malta with a share of 88.8% of the gross national emissions. Within this sector the energy industries (power plants) account for the majority of the emissions (72.3%) and this has increased by 41.2% between 1990 and 2011. This activity also remains the highest contributor overall. The second highest contributor is transport (which incorporates road transport, national navigation and domestic aviation), this accounts for 21.1% of the energy sector emissions, and representing an increase of around 61.9% over the time series covered by this report. The other energy sub sectors together make up the remainder of this sector's emissions. Emissions within the Industrial Processes sector account for 4.7% for 2011. It should be noted here that many of the industrial process categories as stipulated by IPCC guidelines do not occur in Malta. The Solvent and Other Product Use sector comprises a very small amount of the total emissions throughout the whole time series; in 2011 it accounted for less than 0.1% of total emissions. The sector has also seen a decrease of 47.3% over the whole time series. Agriculture in Malta is estimated to contribute around 2.4% of total national GHG emissions for 2011. The Waste sector has the third largest share of the total GHG inventory emissions (4.3%), with the largest portion of emissions for the reporting year 2011 resulting from the Solid Waste Disposal on Land category (86.1%), followed by liquid waste (13.2%). The overall trend in this sector for the whole time series is one of continued increase in emissions (235% increases over 1990). The Land Use, Land-Use Change and Forestry (LULUCF) sector includes yearly estimates of carbon dioxide emissions and removals by particular vegetation types. In 2011 - 59.67 Gg of CO_2 removals were estimated, accounting for a net removal equivalent to 2.0% of the total emissions for 2011.

Status and trends in extent and condition of habitats that provide carbon storage: Wetlands in Malta do not comprise lakes and rivers which are entirely absent. Instead, in Malta's case wetlands comprise small transient 'water bodies' and this is indeed the case for water-related habitats under the EC Habitats Directive 3140 and 3170 as represented in Malta's environmental context. These habitats normally occur as small temporary pools within limestone areas, which usually also include garrigue and grassland areas, that is they can be found within a heathland/shrub ecosystem. Malta does have a limited number/extent of wetland areas and watercourses/valleys, some of which have been afforded protection under various pieces of legislation. Two sites which are considered two of the few main wetlands in the Maltese Islands, and which are actually marshlands, are designated as Ramsar Sites (apart from forming part of the Natura 2000 network and having other designations). In all, Malta supports about 25ha of wetlands, and a valley system of about 480km in length. While efforts are made to maintain the status and extent of such habitats, various pressures do prevail (such as improved access to sites, human intrusions and disturbances, dumping, discharges/pollution, invasive non-native species), apart from the aspects of scarcity, limited extent and fragmentation. Taking into consideration water-related habitats assessed through the Article 17 implementation report under the Habitats Directive (1150, 1310, 1410, 3140, 3170), these have all

161 https://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/mlt-2013-nir-15apr.zip

been assessed as having an unfavourable (unfavourable-inadequate, unfavourable-bad) or unknown status in the 2007 report, and all being assessed as unfavourable-inadequate in the 2013 report (changes from one report interim to another were not due to genuine changes). Noting the characteristics of wetlands in Malta, their capacity to act as carbon sinks is limited.

When considering forests, it is particularly relevant to note that no true forests exist in Malta; most often forest-related habitats are typified by forest remnants with Holm Oak, maquis and mattorral communities (*Olea europea*, *Ceratonia siliqua*, *Pistacia lentiscus*, *Rhamnus alaternus* and *Laurus nobilis*) and galleries with riparian trees (*Tamaritecea* and *Populetea* communities). Such habitats are nonetheless at times classed under "forests" for Malta since they are distinguished as "wooded areas". Taking into consideration the woodland/maquis habitat types assessed under the Article 17 Implementation Report under the EC Habitats Directive (5230, 9320, 9340, 9540, 92A0), these have been assessed as having an unfavourable (unfavourable-inadequate, unfavourable-bad) or unknown status in 2007, and as unfavourable (unfavourable-inadequate, unfavourable-bad) or favourable status in 2013 (changes from one report interim to another were not due to genuine changes). Various afforestation activities throughout Malta and Gozo are also worthy of mention here. Malta's PAMS Report for 2013 in the context of land use, land use change and forestry (LULUCF) that: "[i]n recent years afforestation projects have been undertaken that have had an effect on the area covered by permanent vegetation, particularly trees; however, the CO_2 removals have not been estimated, given the small contribution expected in terms of national GHG removals as well as the complexity of estimating GHG savings of this measure in the short term." CO_2 removals through land use, land use change and forestry accounted for 59.66Gg in 2011 (MRA, 2013)[162].

Considering *Posidonia* meadows, and taking into consideration the assessments made for the Article 17 reports of 2007 and 2013, this habitat has been assigned a favourable conservation status for both interims.

16	**Aichi Target 16**: By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation. *National Target: By 2020, access to national genetic resources is regulated through a National Regime on Access and Benefit Sharing (ABS).*	**Progress:** 😐

National Actions and Outcomes Achieved: Malta currently implements the requirements of Article 15 of the CBD via the "Flora, Fauna and Natural Habitats Protection Regulations, 2006, as amended" (Legal Notice 311 of 2006, as amended) by requesting PIC, where applicable. Malta's NBSAP calls for a strengthened national ABS Regime. Presently, national preparations are underway in order to be in a position to implement the access pillar of Nagoya Protocol at a national level. The compliance pillar will be implemented through the EU Regulation No. 511/2014 on compliance measures for users resulting from the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in the Union. The implementing legislation to address provisions of the EU Regulation that are of Member State Competence is also being drafted.

Indicators Used:

Trends in access and equity of benefit-sharing of genetic resources: No data on trends is currently available.

Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building

17	**Aichi Target**: By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.	**Progress:** 😐

[162] MRA (2013). *National Greenhouse Gas Emissions Inventory Report for Malta 1990-2011.*

	National Target: *By 2020, Malta is implementing an effective and participatory national biodiversity strategy and action plan (NBSAP)*	

National Actions and Outcomes Achieved: There is limited progress in the implementation of NBSAP measures with respect to mapping of ecosystem services, landscaping guidelines update, protected area governance assessment and invasive alien species codes of conduct. In contrast both good and excellent progress is being made in the implementation of NBSAP measures falling within the thematic areas on protected areas, sustainable use of biological resources, communication activities, environmental assessments, and networking. The timelines of certain measures is to be reviewed as indicated in Section 2.12 of Malta's 5NR.

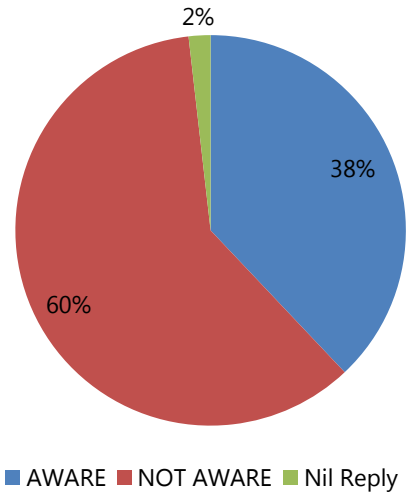


Chart 21 – Question – Are you aware that Malta's adopted a National Biodiversity Strategy entitles "Working Hand-in-Han with Nature"?

Indicators Used:

Number of NBSAP Measures with a ☺: 18%
Number of NBSAP Measures with a 😐: 58%
Number of NBSAP Measures with a ☹: 6%

Percentage of Maltese Citizens aware of the NBSAP: As part of the questionnaire-based survey undertaken by MEPA on biodiversity valuation, the final question sought to understand the level of awareness amongst respondents of the adoption of Malta's NBSAP, which happened on 12 December 2012 in a joint press launch by the then Ministry responsible for the environment and MEPA. As seen in Chart 21, 61% (100 out of 166) of respondents are unaware of Malta's NBSAP. Those who are aware of it, learnt about the NBSAP namely through the media (internet including MEPA's website, on local news or having read about it in a local newspaper). Other means were through work, through research, and in a few cases either through friends or through a NGO of which the respondent was a member. Those who are not aware of Malta's NBSAP mentioned lack of publicity, visibility and lack in media and not having heard of it or come across it as reasons. Others expressed the view that the NBSAP was not well communicated to citizens and to certain stakeholder groups. Some justified their not be aware of Malta's NBSAP because they do not follow local media. It is probable (even from learning from certain respondents – at least 2 are known to be the case) that some did not link the question which referred to the strategy as "Working hand-in-hand with nature" with the actual NBSAP, as the strategy is better known and hence replied as a "no". One respondent mentioned that she became aware of it through this questionnaire, since a link was provided to the actual NBSAP document. Some respondents mentioned that while there are aware of it on paper, they are not aware of it in practice. Others shared similar views, stating that they have not seen concrete action on the ground. The development process of Malta's NBSAP included a brainstorming exercise that kicked of the process with a group of stakeholders as well as specific consultations on the draft consultation document. The launch for public consultation and the formal adoption occurred as press events that were then communicated in local newspapers and also via the local news. All proposed targets in the NBSAP were published in batches in the One World Segment of the Times of Malta and the draft and final text were uploaded on MEPA's website. Consultation meetings were held with Ministries and with stakeholder groups. Notwithstanding this, the results of this questionnaire-based survey point to the need to promote further Malta's NBSAP also noting that 90 respondents (out of the 100 not aware of the NBSAP) expressed interest in learning more about it while 5 respondents specifically commented on their disinterest in the NBSAP.

18	**Aichi Target**: By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels. *National Target: By 2020, the contribution of local communities/ entities to the sustainable management of biodiversity is recognised and enhanced.*	**Progress:** 😐

National Actions and Outcomes Achieved: Management plans and conservation orders currently being developed for all terrestrial Natura 2000 sites involve intensive stakeholder involvement and participation.

A Citizen Science scheme is currently being utilised to collate observational data on species through public participation. Additional information on this initiative may be viewed at http://www.mepa.org.mt/citizenscience. So far the level of engagement by the public in this initiative has not been adequate. Yet as noted by the findings of the biodiversity valuation exercise, there is interest to volunteer in biological recording. It might be the case that the biological recording sheets need to be made more user-friendly combined with additional promotion of this initiative.

The voluntary contribution from divers was sought in the MedPAN North Project study on invasive marine species within marine protected areas in Malta. Further details on this project may be found at this link http://www.mepa.org.mt/newslet35-article2.

Continuous discussions take place between the Maltese authorities and relevant NGO's including BirdLife Malta and FKNK (the local Federation of Hunters and Trappers), who are both represented on the national Ornis Committee, which was established by the Conservation of Wild Birds Regulations, 2006 (Legal Notice 79 of 2006, as amended) specifically to provide a forum for discussions on policies related to the conservation of birds and various stakeholders concerns. The Committee also fulfils the important role of making recommendations to the Maltese Government on a wide array of issues ranging from conservation status of particular species to conditions of hunting seasons as well as recommendations on enforcement or legislative proposals. The Maltese government also maintains on-going dialogue with a range of environmental organisations and regular meetings are held with these NGOs, whereby a variety of policy issues and proposals are discussed. Community initiatives in support of biodiversity in localities need to be promoted further.

Indicators Used:

Number of local community initiatives that support biodiversity: No data is currently available.

19	**Aichi Target**: By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied. *National Target: By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved and applied.*	**Progress:** 😐

National Actions and Outcomes Achieved: Various projects contribute to strengthening the knowledge and science base and include amongst other the Med-Pan North Project, Life Baħar for N2K, the Malta Seabird Life Project, and the LIFE Migrate Project. More information on these projects is available under Question 3 of this Report. Moreover, research that is carried out by local experts and environmental consultancy agencies greatly aids the acquisition of invaluable information on components of biological diversity. Areas of study are various, and include botany, entomology, ichthyology, mammology, and ornithology, amongst others. For the marine environment, Malta is currently drafting a marine monitoring strategy with the aim of streamlining monitoring obligations pertaining to the marine environment and ensuring comprehensive data collection. The MSFD monitoring programme which is also being drawn up as part of thematic

monitoring factsheets for the marine environment, should also address some of the data gaps as identified through the MSFD Initial Assessment.

The National Curriculum Framework puts forward Education for Sustainable Development (ESD) as an inter-curricular theme to promote teaching and learning about sustainability issues, including about biodiversity. It also proposes several measures such as interdisciplinarity, a learner-oriented pedagogy, the development of critical thinking and participatory skills that facilitate ESD's infusion in the educational system. Moreover, MCST encourages the use, transfer and application of knowledge (with the ultimate aim of economic growth and improved quality of life). The new national R&I Strategy 2020, which was launched in June 2014, provides a strategic framework for measures to address these objectives in the coming years.

There is evidence of increasing participation and engagement of local students in projects organised by the school and/or community (even in collaboration with environmental NGOs) aimed to support the local environment, with emphasis on local flora and fauna.

At MCAST, Science and Technology is a key skill and is to be taught across all MCAST Institutes at MQF Levels 1 to 3, including topics on the Living World and biodiversity concepts, from academic year 2014-2015. This will provide all MCAST students progressing from these lower levels to have an adequate knowledge and awareness of biodiversity concepts. Limited activities are implemented by some MCAST institutes to support local biodiversity initiatives. It's newly set-up Applied Science Institute, established in 2011, together with its Institute of Agribusiness, provide a practical and applied focus on environmental sustainability topics, in line with industry occupational standards and expected learning outcomes.

An understanding of biodiversity and related issues is a key component study units taken as part of undergraduate courses within the Department of Biodiversity at the University of Malta. The level of taxonomic and other scientific knowledge of Malta's biodiversity has increased over the years, as evidenced by publications of Maltese researchers in the area. Interdisciplinary research is however rather rare, since most of the research tends to be monodisciplinary. Still, it has, not reached the desired level.

Biodiversity also features in the study units offered by CEER to university students. These units are part of the compulsory programme for teacher education. Other optional units are offered for students from other faculties.

The work of environmental consultancy agencies and the technical expertise and scientific advice they provide is essential for improving knowledge, the science base and technologies relating to biodiversity in the country. Services comprise ecological surveying and monitoring, floristic and faunistic studies, taxonomic identification as well as inventorying, and also laboratory analysis of environmental media (soil, water and air).

Indicators Used:

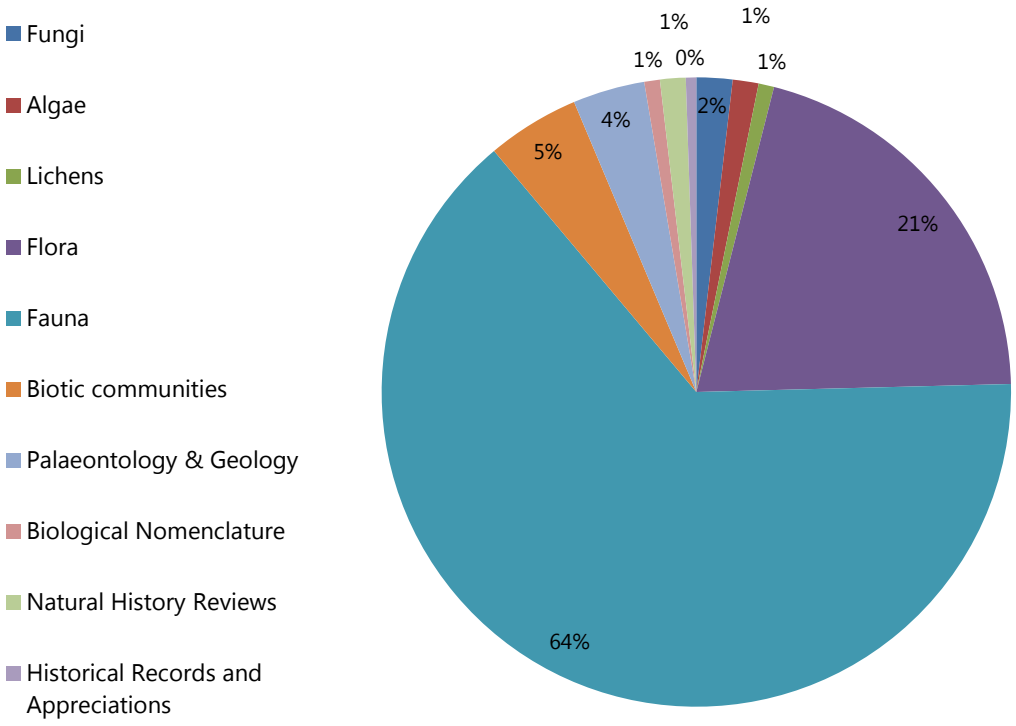
Trends in accessibility of scientific and technical knowledge and its application: Scientific knowledge acquired at a national level is generally published in peer-reviewed scientific journals or bulletins. Relevant journals edited and published by Maltese entities include Xjenza (the open access Journal of the Malta Chamber of Scientists)[163]; the Malta Entomological Bulletin (launched by the Entomological Society of Malta) and the Central Mediterranean Naturalist (published by Nature Trust Malta since 1979). Scientific research by local scientists is also presented as talks or poster presentations in national symposia or conferences abroad and later published as proceedings or reports. For instance, all abstracts of dissertations undertaken by students of the Department of Biology within the University of Malta are present in the Annual National Biological Symposium and published as a booklet. Generally, published material on the internet is widely accessible if it is open access. Articles may also be made accessible by the authors upon request. Scientific knowledge in Malta is applied in policy formulation as well as applied in reporting on biodiversity assessments. This has been the practice for reporting requirements of the Nature Directives and the Initial Assessment required by the Marine Strategy Framework Directive. Wherever there are knowledge

[163] http://www.mcs.org.mt/index.php/xjenza

gaps, specific studies may be commissioned as seen on several occasions by the Malta Environment and Planning Authority. The "Freedom of Access to Information on the Environment Regulations, 2005, as amended" (LN 116 of 2005, as amended) *inter alia* guarantee the right of access to environmental information held by or for public authorities and ensure that, as a matter of course, environmental information is progressively made available and disseminated to the public in order to achieve the widest possible systematic availability and dissemination to the public of environmental information. Overall, there is an increasing trend in accessibility of scientific and technical knowledge and its application in Malta.

The work of Sciberras, Sciberras & Deidun (2008) lists the complete contents of three local natural history periodicals: The Maltese Naturalist (published from 1970 to 1976, totalling 79 published papers), Potamon (published from 1979 to 1989, totalling 158 published papers) and the Central Mediterranean Naturalist (published from 1979 to date, with 141 papers published so far). A total of 378 papers were hence published in all the three journals under review, which are broken down further as illustrated Chart 22.[164]

Chart 22 - Contents of three local natural history periodicals



20	**Aichi Target**: By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. *National Target: By 2020, capacity for national implementation of the*	**Progress:** 😐

[164] Sciberras, A., Sciberras, J., and Deidun, A. (2008). The complete contents of The Central Mediterranean Naturalist, Potamon and The Maltese Naturalist, Three natural history periodicals published locally from 1970 to date. *The Central Mediterranean Naturalist*, 4(4): 289-310.

	Convention on Biological Diversity, other related Multilateral Environmental Agreements (MEAs) and EU obligations, has increased from current levels.	

National Actions and Outcomes Achieved: Various initiatives have been taken or are ongoing to help strengthen Malta's capacity to implement MEAs and EU Policy at a national level in the fields of for instance combating wildlife crime and environmental monitoring.

Biodiversity issues are being integrated in the national operational programmes for EU financing support. The Partnership Agreement has been adopted while the Operational Programmes are work in progress. More information is available from: http://ppcd.gov.mt/eufunds20142020 and specifically to the Public Consultation Document: Programming of European Funds for Malta 2014-2020 (July 2013).

The Employment and Training Corporation in Malta acknowledges that public employment services can play an active role in promoting green skills where there is market demand. The strategic development of training is a central element to ensure that an efficient match between education, training and employment is secured. To this effect, ETC has been conducting a forecasting analysis on the skills that are needed in the labour market. Moreover, ETC keeps record of the vacancies, employment by sector and industry, and unfilled vacancies, as these are important indicators to assess the employment situation at a national level. These tools will assist ETC to have a better assessment of the skills needed, the existing job opportunities, and the demand side of industry related to biodiversity and green jobs. Notwithstanding, it is to be recognised that both nationally and at European level, there is no agreed definition of what constitutes green jobs, and therefore, one needs to take account of this weakness. Amongst the various courses offered by the ETC under the ESF Project 2.201 – Enhancing Employability through Training, there is the Gardening and Landscaping course. The ETC is currently designing a new training programme for persons who can perform tasks related to the maintenance and repairs of water wells. The design of this new programme is in its final stages and it is being anticipated that the certificate awarded to those successfully completing this course will be pegged at MQF level 3. Besides short courses, the ETC also offers Apprenticeships Schemes. Apprenticeship is based on a dual learning system, whereby an apprentice acquires off-the-job training through two VET Institutes (namely MCAST and ITS) and on-the-job training through employers. MCAST, in collaboration with ETC will be offering a Diploma in Green Energy Technologies through apprenticeship. Hence, biodiversity's conservation and sustainable use will have a positive impact on the standard of living and on sectors that are central for generating commercial activity and employment. In addition, raising awareness about biodiversity would encourage people to respect it and seek ways to enrich the environment. As part of the awareness-raising, training programmes are needed to be developed and implemented which will help persons develop their skills and hence generate more opportunities related to green jobs, such as jobs in renewable energy.

Indicators Used:

Amount of Official Development Assistance (ODA) provided by Malta: Malta's Official Development Assistance consists of:

- a financial contribution to the EU budget's external assistance instruments
- a financial contribution to the European Development Fund (EDF)
- financial contributions to other bilateral or multilateral organisations in accordance with the rules established by the OECD-DAC. This may include, *inter alia*, financial commitments in relation to climate change, biodiversity and sustainable development.

The Ministry for Foreign Affairs, through its Development Unit, coordinates an annual national exercise to collect data information and expenditures that may be eligible as ODA according to the rules established by the OECD DAC. The areas of focus are as mentioned in the Official Development Assistance Policy document for Malta.[165]

In the run-up to COP-15 in Copenhagen, Malta joined other Member States in agreeing on an EU

[165] http://foreignaffairs.gov.mt/en/Pages/Official%20Development%20Assistance.aspx

position with regards to emission reductions, as well as the EU's contribution for Fast-Start funding. During the Copenhagen Conference of 2009, Malta pledged and contributed €800,000 to Fast-Start Finance projects from 2010-2012. Malta's contributions during 2010 were chaneled through the DiploFoundation for capacity building in SIDS (€25,000), and the Global Alliance for Clean Cookstoves an initiative led by the United Nations Foundation (€125,000). Support to developing countries during 2011 and 2012 has been primarily focused on grants by the government for specific projects related to climate change mitigation or adaptation activities. During 2011, a total amount of €300,000 was disbursed for projects. A similar sum of money amounting to €350,000 was granted in 2012 for projects.

Trends in the uptake of EU funds in support of biodiversity at a national level: The amount of EU funds tapped in support of biodiversity at a national level between 2005 and 2013 is as follows (the date expresses the year when project was completed):

Year 2005:

- The "Emerald Network Project" had a total budget of 8,257 € (https://www.mepa.org.mt/coe_emerald)
- The "Regional Project for the development of marine and coastal protected areas in the Mediterranean region (MedMPA)" was funded under the Short and Medium Term Action Plan (SMAP) and had a total budget for MEPA of 12,500 € (https://www.mepa.org.mt/smap_medmpa)
- The Project "A Biological Collection Access Service for Europe (BIOCASE)" was financed by the 5th Framework Programme (FP5) and had a total budget of 1,937,019 € of which MEPA's share was 9,492 € (https://www.mepa.org.mt/fp5_biocase)

Year 2006:

- The Project "Marine Scientific Surveys around Filfla for its Conservation" was financed from the European Regional Development Fund (ERDF) and had a total budget of 200,000 € of which 73% was financed by the EU (https://www.mepa.org.mt/erdf_filfla)

Year 2007:

- The Project "Strengthening Institutional Capacity for the Implementation of the Nature Protection Acquis" was financed from the Transition Facility Programme for Malta and had a total budget of 400,000 € provided in whole by the EU (https://www.mepa.org.mt/tf04_nature)
- The Project "Setting up the first coastal nature reserve in Malta - Dwejra" project was financed from LIFE (third countries) Community Programme with a total budget of 324,708 € to which MEPA contributed 72,600 € (https://www.mepa.org.mt/life_dwejra)

Year 2008:

- The project "Mediterranean Protected Areas Network - MEDPAN" was financed by Interreg IIIC South Zone and had a total budget of 1.6 million €, of which MEPA's share was 64,000 € (https://www.mepa.org.mt/interreg3c_medpan)
- The "Network of Parks" project was financed by Interreg IIIC South Zone and had a total budget of 1.3 million €, of which MEPA's share was 60,000 € (https://www.mepa.org.mt/interreg3c_rdp)

Year 2009: No direct biodiversity projects were completed during this year.

Year 2010:

- The project "SPA site and sea actions saving *Puffinus yelkouan* in Malta" was financed from LIFE (Nature Strand) Community Programme with a total budget of 919,733.00 € of which the EU contribution was of 459,866.00 € (http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3143)

Year 2011:

- The project "Bird Migration and Trapping - Changing cultural attitudes to Trapping in order to facilitate implementation of the Birds Directive in Malta" was financed by LIFE+ (Information and Communication Strand) with a total budget of 315,794.00 € of which the

EU contribution was of 157,897.00 €. (http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3318)

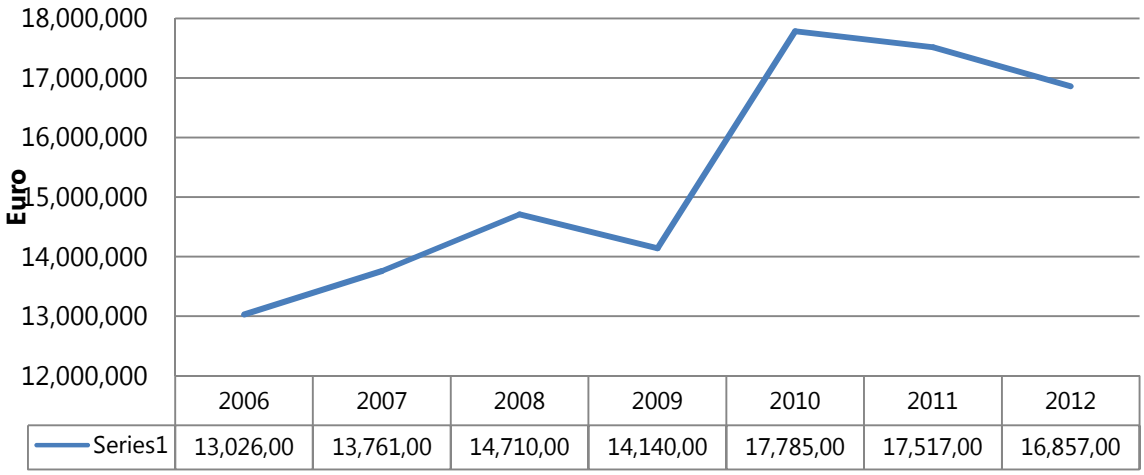
Year 2012: No direct biodiversity projects were completed during this year.

Year 2013:

- The project "MEDPAN North" was a continuation of the Interreg 3C MEDPAN project and was part-financed by the European Union European Regional Development Fund (ERDF) with a co-financing rate of 85% EU Funds and 15% National Funds. The total budget allocation for MEPA is € 142,000, 15% of which will be provided by MEPA as co-financing. (https://www.mepa.org.mt/med_medpannorth)

Government expenditure by function on the basis of ESA95 methodologies: As part of the annual communications on "Expenditure of General Government Sector by function", and on the basis of the European System of Accounts (ESA 95) Manual, the National Statistic Office provides expenditure figures for the function "environment protection" which includes category 05.40 on protection of biodiversity and landscape (CS). The latter comprises expenditure figures with respect to: administration, supervision, inspection, operation or support of activities relating to the protection of biodiversity and landscape; and grants, loans or subsidies to support activities relating to the protection of biodiversity and landscape. The expenditure for the period 2006 to 2012 is shown in Chart 23 [166].

Chart 23 - Expenditure of General Government Sector by function - Protection of Biodiversity & Landscape



	2006	2007	2008	2009	2010	2011	2012
Series1	13,026,00	13,761,00	14,710,00	14,140,00	17,785,00	17,517,00	16,857,00

Source: NSO

State of progress in biodiversity valuation, identification of funding needs, gaps and priorities and the development of the national biodiversity financing plan: With respect to biodiversity valuation, a qualitative exercise was undertaken via a questionnaire-based survey of how citizens in Malta value biodiversity. The findings are reported Sub-section 1.2.2 of Malta's 5NR. Funding needs of protected areas has been assessed and the prioritised action framework drawn up. Biodiversity issues are being integrated in the national operational programmes for EU financing support. Work on the drafting of a national biodiversity financing plan as required by the CBD by 2015 has also commenced.

Number of initiatives that engage Parties in new and innovative financial mechanisms: There is no information available at the time of reporting.

3.2 Contribution to the achievement of relevant 2015 targets of the Millennium Development Goals

[166] http://www.nso.gov.mt/statdoc/document_file.aspx?id=3237 and http://www.nso.gov.mt/statdoc/document_file.aspx?id=3900

Information on Malta's contribution to the achievement of relevant 2015 targets of the Millennium Development Goals is presented in the table below with a focus on goal 7 on ensuring environmental sustainability.

Millennium Development Goals (MDGs)		
Goals and Targets (from the Millennium Declaration)	**Indicators for monitoring progress**	**National contributions**
Goal 7: Ensure environmental sustainability		
Target 7.A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources Target 7.B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss	7.1 Proportion of land area covered by forest	When considering CORINE land cover data (2006) the proportion of land area covered by forest is 0.2% coniferous forest and 0.5% mixed forest. This has remained as is in the context of the 2010 CLC data. The following forest-related habitats fall within the Natura 2000 network in Malta and are hence protected and covered by the management planning process for terrestrial sites: 92A0 - *Salix alba* and *Populus alba* galleries (U2= status in 2013); 92D0 - Southern riparian galleries and thickets (Nerio-Tamaricetea) (U1- status in 2013); 5230 - Arborescent matorral with *Laurus nobilis* (U1= status in 2013); 9320 - *Olea* and *Ceratonia* forests (FV status in 2013); 9340 - *Quercus ilex* forests (U1= status in 2013); and 9540 - Mediterranean pine forests with endemic Mesogean pines (U1= status in 2013). For further information see Sub-section 1.3.4 of Malta's 5NR.
	7.2 CO_2 emissions, total, per capita and per $1 GDP (PPP)	Information on national actions is provided in Sub-section 2.7.3 of Malta's 5NR. The compilation of the annual national GHG emissions and removals inventory is delegated to the National Emissions Inventory Team within the Climate Change and Policy Unit at MRA. Latest figures on annual national GHG emissions and removals are communicated in Malta's National Inventory Submission Report of 2014, which provides estimates for the period 1990-2012. The total GHG gross emissions amounted to 3140.15 Gg CO_2 eq. in 2012, an increase of 57.5% compared to 1990. CO_2 is the largest contributor to national emissions with 89.5% share of total gross emissions in 2012. The "Policies and Measures Report" (PAMs) in accordance with Regulation (EU) No 525/2013 gives a comprehensive list of implemented and planned measures in relation to GHG mitigation

<table>
<tr><th colspan="3">Millennium Development Goals (MDGs)</th></tr>
<tr><th>Goals and Targets (from the Millennium Declaration)</th><th>Indicators for monitoring progress</th><th>National contributions</th></tr>
<tr><td colspan="3">Goal 7: Ensure environmental sustainability</td></tr>
<tr><td></td><td></td><td>and the way forward for Malta in respect of its mitigation targets, encompassing the main sectoral Government policies. Per capita emissions in 2012 stood at 7.4 tonnes CO_2 eq., a 35.3% increase over 1990. Contrary to the situation for per capita emissions, the emissions intensity of the Maltese economy has seen a downward trend, with a value of 460 Gg CO_2 eq. per unit €billion GDP (ESA 95), a reduction of 56% over 1990. This can be interpreted as a sign of decoupling of national totalemissions from the country's economic development trends.</td></tr>
<tr><td></td><td>7.3 Consumption of ozone-depleting substances</td><td>Data for Malta on Consumption of all Ozone-Depleting Substances in ODP metric tons:[167] is as follows:
<table>
<tr><td>1990</td><td>194.7</td></tr>
<tr><td>1991</td><td>130.2</td></tr>
<tr><td>1992</td><td>95.9</td></tr>
<tr><td>1993</td><td>71.9</td></tr>
<tr><td>1994</td><td>135.3</td></tr>
<tr><td>1995</td><td>109.5</td></tr>
<tr><td>1996</td><td>98.4</td></tr>
<tr><td>1997</td><td>82.1</td></tr>
<tr><td>1998</td><td>143.4</td></tr>
<tr><td>1999</td><td>261.1</td></tr>
<tr><td>2000</td><td>99.5</td></tr>
<tr><td>2001</td><td>94.7</td></tr>
<tr><td>2002</td><td>40.5</td></tr>
<tr><td>2003</td><td>43.8</td></tr>
</table></td></tr>
<tr><td></td><td>7.4 Proportion of fish stocks within safe biological limits</td><td>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. The Malta-EU negotiations on the Fisheries Management Zone (FMZ) have led to the adoption of Council Regulation EC 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 –</td></tr>
</table>

[167] http://mdgs.un.org/unsd/mdg/SeriesDetail.aspx?srid=753&crid=

Millennium Development Goals (MDGs)		
Goals and Targets (from the Millennium Declaration)	**Indicators for monitoring progress**	**National contributions**
Goal 7: Ensure environmental sustainability		
		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. The "Implementation and Enforcement of Certain Fisheries Management Plans Order, 2013" (Legal Notice 354 of 2013) adopts the management plans for the Lampuki fishery, Lampara fishery and Bottom Trawling which were approved by the European Union. National fisheries policy is also modelled on the EU Common Fisheries Policy and its reform. The reform favours the sustainable management of fish and establishes measures against over-fishing and ensuring productivity of fish stocks to maximise sustainable yield (MSY), including via multi-annual recovery and management plans governed by the ecosystem approach. More information is available in Sub-section 2.8.3 of Malta's 5NR.
	7.5 Proportion of total water resources used	In small islands and coastal river basins, natural subsurface discharges of groundwater at the coast can reach levels of around 50-60% of the mean annual recharge to groundwater and is thus an important factor in the water balance calculations. It is one of the main factors limiting groundwater availability and its non-consideration has the effect of artificially increasing the 'Available Renewable Water Resources' since freshwater lost by this natural process is not available for abstraction and subsequent use. Additionally, one should note that the small distance to the coast and other topographical considerations limit the proportion of rainwater runoff which can be collected/harvested for eventual re-use. Due to their small size, the proportion of rainwater runoff generated in near coastal areas (and thus not recoverable) assumes higher significance compared to bigger continental river basins. Similarly to subsurface discharge, not taking this fact into consideration results in artificially increasing the 'Renewable Water Resources'. The main impact of these two factors, namely increasing the 'Renewable Water Resources' can result in artificially low indices of Water Exploitation for these river basins if not properly accounted for, which do not reflect the reality

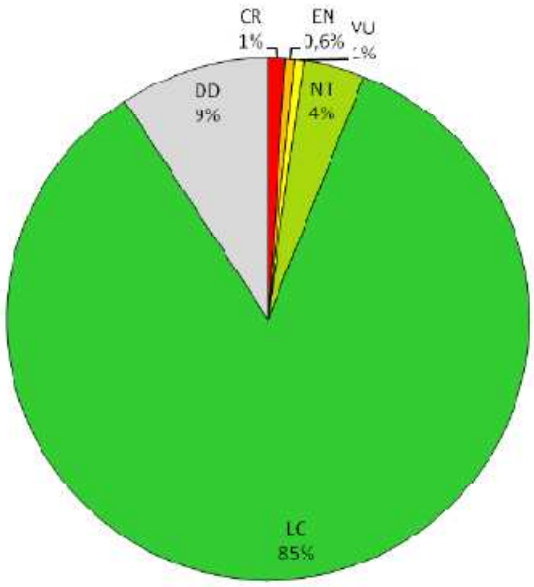
Millennium Development Goals (MDGs)		
Goals and Targets (from the Millennium Declaration)	**Indicators for monitoring progress**	**National contributions**
Goal 7: Ensure environmental sustainability		
		which these basins are facing. Considering data from Malta RBD as a case study, deducting the natural subsurface discharge and unrecoverable surface runoff from the 'Renewable Water Resources' (as these volumes cannot actually be recovered) results in a better estimation of the actual full use-potential. The resulting WEI+ is 69% for the long-term average and 99% for the year 2010, demonstrating conditions of heavy exploitation, as presented Figure 19. If these volumes had been considered as available for abstraction, the WEI+ value would have been 40% and 55% respectively, illustrating a lower and unrealistic exploitation of the RBD (source: Vulnerability to Water Scarcity and Drought in Europe, Thematic assessment for EEA Water 2012 Report). For more information on national actions in the water resources sector please refer to Sub-section 2.8.6 of Malta's 5NR.

Parameter	LTAA	2010	Comments
Precipitation (hm3)	174	162	
Actual Evapotranspiration (hm3)	105	97	assumed at 60% of total precipitation in both cases
Renewable Water Resources (hm3)	69	65	
Natural subsurface discharge (hm3)	23	23	
Unrecoverable surface runoff (hm3)	6	6	Estimated at 25% of total surface runoff generated (initial estimate)
Actual available Water Resources (hm3)	**40**	**36**	
Total Abstraction (hm3)	37,5	43,7	
Returned water (hm3)	10	8	return from leakages - value is reducing due to leakage programme
WEI+	**69%**	**99%**	

Source: Data provided by the EIONET NFP of Malta (Malta Resources Authority, Regulation Unit) during the EEA Consultation of the WEI+ in August 2012

Figure 19: Calculation of the Water Exploitation WEI+ for Malta RBD, taking into account the volume of water resources that cannot actually be recovered

	7.6 Proportion of terrestrial and marine areas protected	A number of areas in Malta have been designated as part of the EU Natura 2000 network. As of end 2011, Malta had 27 terrestrial sites covering 41.8km^2 or 13.1% of land area, and 1 marine area of 8.5km^2 forming part of the network. Four additional marine sites were submitted to the

		European Commission in 2011 to form part of the Natura 2000 network. These were subsequently adopted on 16 November 2012. The 5 marine sites in all cover an area of 190.8km^2. Some amendments to selected terrestrial sites were also considered and approved resulting in 13.3% of land area being now covered. In line with the obligations of the Birds Directive, by December 2011 Malta had designated 13 special protection areas (SPAs) covering 16.5km^2 or 5.2% of land area, which are automatically Natura 2000 sites. In some cases the areas designated under the two Directives overlap. Information on all types of protected area designation is provided in Sub-section 2.4.3 of Malta's 5NR.
	7.7 Proportion of species threatened with extinction	A report by del Carpio, Sánchez, Nieto & Bilz (2013)[168] provides an overview of the conservation status of species in Malta on the basis of the results of all European Red Lists completed to date. The results are shown illustrated Chart 24 and Figure 20. It is important to note that this report does not provide the actual status of the species in the country. As indicated by the NBSAP Measure PA2, the updating of national red lists shall be completed by 2016.  Source: del Carpio, Sánchez, Nieto & Bilz (2013) **Chart 24 – European Status of Species in Malta**

[168] Malta's Biodiversity At Risk – A Call for Action - https://cmsdata.iucn.org/downloads/malta_s_biodiversity_at_risk_fact_sheet_may_2013.pdf

Species group	No. of sp. in Europe	No. of sp. in Malta	% of European sp. occurring in Malta	No. of threatened sp. in Malta (status at European level)		
				CR	EN	VU
Mammals	233	22	9%	1	0	1
Reptiles	140	6	4%	0	0	0
Amphibians	83	2	2%	0	0	0
Freshwater fishes	522	1	0.2%	0	0	0
Butterflies	435	18	4%	0	0	0
Dragonflies	137	14	10%	0	0	0
Saproxylic beetles**	431	20	5%	0	0	0
Terrestrial molluscs**	1,233	21	2%	0	0	0
Freshwater molluscs	854	12	1%	0	0	0
Vascular plants**	1,826	252	14%	3	2	1
TOTAL	**5,894**	**368**	**6%**	**4**	**2**	**2**

**Not comprehensively assessed, selected species only.
This table does not include the Not Applicable (NA) species in Europe (species introduced after AD 1500 or species of marginal occurrence).
The data are based on the results of the European Red List (European region wide assessment).

Source: del Carpio, Sánchez, Nieto & Bilz (2013)

Figure 20 – Number of species assessed within each IUCN Red List category at the European level

3.3 Areas where achievements have been made

When considering the NBSAP thematic areas main achievement have been made with respect to communication, education and public awareness, Malta's national ecological network of protected areas, and in addressing knowledge gaps via EU co-funded projects.

3.4 Areas where progress is lacking and where challenges are encountered

Progress is lacking where action is hindered by resource constraints (human, technical and financial). In certain cases progress is lacking because work is yet to commence or preparations are underway.

3.5 Gaps and future priorities

The strategic goals that are mentioned in Malta's NBSAP and that are seen as pre-requisites for making progress towards the national biodiversity targets are also relevant to further enhance the implementation of the Convention at the national level and, in particular, to achieve the strategic goals and targets of the Strategic Plan for Biodiversity 2011-2020. These goals are the following:

- The full range of values of biodiversity and ecosystem services, as well as the potential role of biodiversity in addressing other environmental challenges (such as climate change), should be recognised at all levels and be fully reflected in decision and policy-making, where relevant;
- A coherent biodiversity monitoring regime is required to build a stronger knowledge base on the conservation status and trends of species and habitats of European community and national importance, in particular for those currently assigned an "unknown" status;
- Enhanced national implementation of relevant programmes of work (PoW) under the framework of the Convention on Biological Diversity necessitates collaborative projects and enabling activities;
- Strengthening the relationship between policy making and scientific research would ensure that research addresses the needs of policy makers and that in turn, policy development responds to research findings;
- Resource mobilisation is needed to improve national capacity in the fields of enforcement, site management, monitoring as well as research and development;

- Coordinated action and positive incentives, which promote local participation and private-public partnerships, and which lead to successful conservation and sustainable use of biological and natural resources are promoted, both within and outside protected areas;
- Greater awareness of the linkages between biodiversity, economic prosperity and human welfare is needed as it can empower changes in consumer behaviour based on informed choices and, hence contribute towards a more sustainable-oriented and resource-efficient economy and society;
- The right market signals are required to support the sustainable use of biological and natural resources, and to leverage private investment as well as reward practices that safeguard biodiversity; and,
- Further policy integration of biodiversity concerns in relevant sectors is essential; such mainstreaming should address direct and indirect drivers of biodiversity change, and should build on mutually-supportive measures, which in turn contribute to the achievement of the CBD and EU 2020 targets at a national level.

Appendices

Appendix I - Summary on the participatory process followed in preparing the report

The process for preparing Malta's National Fifth Report (5NR) to the CBD was integrated with the first review of progress made in implementing Malta's National Biodiversity Strategy and Action Plan. Both processes were deemed complementary as they both address the same information needs. The process of report compilation was coordinated by Ms Lisa Schembri Gambin and reviewed by Mr Darrin T Stevens (National Focal Point of the Convention on Biological Diversity) of the Ecosystems Management Unit within the Malta Environment Authority and Planning Authority. This report was also completed with the help of the EU Affairs and Multilateral Affairs personnel within MEPA, in particular Ms Suzanne Gauci, and by the Policy Development and Programme Implementation Directorate within the Ministry for Sustainable Development, the Environment and Climate Change (MSDEC) in particular Ms Margaret Cassar, Ms Kathiana Ghio and Ms Leeanne Galea.

The compilation of this report was carried out on the basis of literature review especially of online sources of information and complemented by direct requests for information that were sent to Ministries, governmental entities, non-governmental organisations, environmental consultancy agencies as well as institutions involved in the provision of higher education.

The Malta Environment and Planning Authority wishes to thank all those people and colleagues who have kindly dedicated their time to contribute their assistance and feedback towards the completion of the NBSAP review process and the 5NR process. The development of this report would have not been possible without the contribution of in particular the following (arranged in alphabetical order by surname) as well as the Directors of EU Affairs within all relevant Ministries who kindly assisted MEPA to collate the requested information within their Ministries:

- Mr Joseph Abela Medici (MEPA)
- Mr Anthony Aquilina (MEPA)
- Ms Francesca Aquilina (Directorate EU Affairs, MEDE)
- Mr Donald Aquilina (MSDEC - Managing Authority)
- Mr David Attard (MSDEC - PARK & Initiatives Directorate)
- Mr Clifford Borg (MSDEC - Plant Health Directorate – Scientific and Technical Co-ordination Unit)
- Mr Duncan Borg (MEPA)
- Dr Joseph A Borg (Department of Biology, University of Malta)
- Ms Odette Borg Cardona (MEPA)
- Ms Amanda Brincat (Employment and Training Corporation)
- Mr Stephen Brincat (MSDEC – Fisheries Management Unit, Department of Fisheries and Aquaculture)
- Mr Alex Camilleri (MEPA)
- Ing Anthony Camilleri (MEAIM - EU Funds Programming and Policy Coordination)
- Mr Charles Camilleri (MSDEC - PARK & Initiatives Directorate)
- Mr Philip Camilleri (MSDEC – Agriculture/Nitrates)
- Dr Marguerite Camilleri (MEPA)
- Ms Claudine Cardona (MEPA)
- Mr Clyde Caruana (Job+ Skills Department)
- Ms Maria-Carla Ciscaldi (MSDEC - Managing Authority)
- Ms Roberta Debono (MSDEC – National Environment Policy Coordinator Assistant)
- Ms Sarah Debono (Ecoserv Ltd.)
- Ms Maureen Delia (MSDEC - Plant Health Directorate)

- Dr Frank Fabri (MEDE - Research and Development Department)
- Ms Bonnie Farrugia (MEPA)
- Mr Ivan Farrugia (MSDEC – Paying Agency)
- Mr Joseph Farrugia (MSDEC - PARK & Initiatives Directorate)
- Ms Marie Therese Gambin (MEPA)
- Mr Herman Galea (MSDEC – PARK & Initiatives Directorate)
- Dr Marica Gatt (MSDEC - Plant Health Directorate)
- Mr Matthew Grima Connell (MEPA)
- Mr Sergei Golovkin (MSDEC - Wild Bird Regulation Unit)
- Ms Fiona Grech (MSDEC - Plant Health Directorate - Monitoring and Control Unit)
- Ms Paula Grech Bonnici (Water Services Corporation)
- Dr Anthony Gruppetta (MSDEC - Directorate For Veterinary Regulation)
- Mr Dennis Kasap (MEPA)
- Mr Richard Lia (MSDEC – Wild Bird Regulation Unit)
- Mr Frans Mallia (MEPA)
- Mr Reno Micallef (MSDEC – Fisheries Resources Unit, Department of Fisheries and Aquaculture)
- Ms Carmen Mifsud (MEPA)
- Ms Stephanie Mifsud (Economic Policy Department, MFIN)
- Ms Josianne Muscat (MSDEC - Plant Health Directorate - Surveillance and Inspectorate Unit)
- Prof. Paul Pace (Centre for Environmental Education & Research, CEER, University of Malta)
- Ms Moira Pisani (Ministry of Tourism)
- Ms Rebecca Pullinger (Birdlife Malta)
- Dr. Ing. Alex Rizzo (MCAST Institute of Applied Science)
- Ms Miraine Rizzo (MEPA)
- Ms Ramona Saliba Scerri (MCST)
- Mr Manuel Sapiano (MEH – Directorate for Water Resources Regulation, Malta Resources Authority)
- Ms Maria Sammut (MSDEC - Paying Agency)
- Mr Mark Scerri (MEPA)
- Mr Dennis Sciberras (MSDEC – Agriculture/Organic Farming)
- Mr Daniel Sultana (MEPA)
- Ms Marilyn Tanti (MSDEC - Paying Agency)
- Ms Julie Tabone (MEPA)
- Ms Joanne Vassallo (MEPA)
- Mr Malcolm Vassallo (MSDEC – Managing Authority)
- Dr Robert Vassallo Agius (MSDEC – Malta Aquaculture Research Centre)
- Ms Juliette Vella (MSDEC – Paying Agency/Cross-compliance)
- Mr Alexei Zammit (MEPA)

As well as representatives from the following entities who have contributed feedback:

- the Timber Control Unit,
- the Malta Competition and Consumer Affairs Authority (MCCAA),
- the Ministry of Foreign Affairs (MFA),
- the Ministry for Home Affairs and National Security (MHAS),
- the Ministry for Transport and Infrastructure (MTI).

Appendix II - Further sources of information

N.B.: All the publications listed below are published in English. Additional references are provided throughout the report as footnotes and are not listed in this appendix.

- National Environment Policy (2012-2020) - https://secure2.gov.mt/tsdu/environment-nep
- National Biodiversity Strategy and Action Plan for Malta (2012-2020) - http://www.mepa.org.mt/biodiversity-nbsap
- National Climate Change Adaptation Strategy - http://mra.org.mt/climate-change/adaptation-to-climate-change/
- First Water Catchment Management Plan for the Maltese Islands - http://www.mepa.org.mt/file.aspx?f=5832
- Guidelines on managing non-native plant invaders and restoring native plant communities in terrestrial settings in the Maltese Islands - http://www.mepa.org.mt/guidelines-alienplants
- Environment Report Indicators 2010-2011 - http://www.mepa.org.mt/teri2010-2011
- Biodiversity-related articles issued in the "One World" segment - http://www.mepa.org.mt/oneworld
- Malta's Article 17 Report in line with the Habitats Directive - http://cdr.eionet.europa.eu/mt/eu/art17/
- Malta's Article 12 Report in line with the Birds Directive - http://cdr.eionet.europa.eu/mt/eu/art12/
- Malta's Natura 2000 Sites - http://cdr.eionet.europa.eu/mt/eu/n2000
- Malta's List of Protected Areas on CDDA - http://cdr.eionet.europa.eu/mt/eea/cdda1
- Malta's Corine Land Cover Data - http://cdr.eionet.europa.eu/mt/eea/clc/

Appendix III - National implementation of the CBD thematic programmes of work

The following sections indicate to what extent Malta is contributing to the attainment of objectives and/or goals, which are established under the CBD framework, depending on Malta's context, priorities and needs. To this end, not all the thematic programmes of the CBD are assessed here, seeing that some would not be applicable (e.g. the PoW on Mountain Biodiversity).

CBD Programme of Work on Island Biodiversity

This PoW addresses biodiversity-related characteristics and problems that are specific to islands (*e.g.* small and concentrated populations of island fauna and flora, endemism, vulnerability to natural and anthropogenic pressures, uniqueness and close connectivity of island ecosystems). Islands and their surrounding near-shore marine biodiversity are considered by this PoW as '*self-contained, bounded ecosystems, each with their own unique, often very limited, assemblage of biodiversity*'. The PoW details a number of global targets and areas of priority action, grouped under 11 goals to address island biodiversity loss. It also suggests supporting actions for implementation by Parties, who are further urged to integrate these into NBSAPs. The goals of the PoW on Island Biodiversity are reflected in the different thematic areas of Malta's NBSAP. More detail is provided in the table below with an indication of progress of implementation of the PoW by Malta provided in Column 3 for 2014 (compared with the status reported in 2010 in column 2).

LEGEND & PROGRESS AT 2014:

☺	Goal/target being attained -Actions in place to support	😐	Goal/target not yet attained - Actions planned/existing but	☹	Goal/target not being attained - Lack of actions that contribute

goal of the PoW	further impetus is required	to the goal of the PoW
23%	77%	0%

Goals of the PoW on Island Biodiversity	Status in 2010 (as reported in 4NR	Status in 2014 (as reported in 5NR	Comments
Goal 1: Promote the conservation of the biological diversity of island ecosystems, habitats and biomes (Target 1.1)	☺	☺	Such promotion is integrated in the legislative framework on nature protection that is subjected to the better regulation initiative as well as in the designation and management processes in relation to protected areas. See sections 2.4.1, 2.4.3, and NBSAP Measures SH2, EN1 and EN2 and Aichi Target 11.
Goal 2: Promote the conservation of island species diversity (Targets 2.1 and 2.2)	😐	😐	Such promotion is integrated in the legislative framework on nature protection that is subjected to the better regulation initiative. Malta has also strengthened species protection by adding more species to its schedules and also by increasing penalties for instance in the case of birds. See section 2.4.1 and NBSAP Measures SH2, SH3, SH4 and SH5 and Aichi Target 12.
Goal 3: Promote the conservation of island genetic diversity (Target 3.1)	😐	😐	See implementation progress of measures under the NBSAP thematic area on genetic resources (NBSAP Measures GR1 and GR2) and Aichi Target 13.
Goal 4: Promote sustainable use and consumption	😐 for targets 4.1 and 4.2 and ☺ for target 4.3	😐 for targets 4.1 and 4.2 and ☺ for target 4.3	Sustainable use is advocated in environmental, fisheries and agricultural policies at a national level. See implementation progress of measures under the NBSAP thematic areas on sustainable use (NBSAP Measures BR1 to BR5), SI9 on sustainable waste management and Aichi Targets 6 and 7.
Goal 5: Pressures from habitat loss, land-use change and degradation, and sustainable water use, reduced on islands (Target 5.1)	😐	😐	See implementation progress of measures under the NBSAP thematic areas on sustainable use of natural resources (in particular NBSAP Measures NR2, NR3 and NR4) and on additional sectoral mainstreaming (SI3, SI4 and SI6), as well as NBSAP Measure EF4 and Aichi Target 5.
Goal 6: Control threats to island biological diversity from invasive alien species (Targets	😐	😐	The future priorities identified for IAS in Malta's 4NR have been

6.1 and 6.2)			integrated in Malta's NBSAP.See implementation progress of measures under the NBSAP thematic area on biological introductions (NBSAP Measures BI1 to BI4) and Aichi Target 9.
Goal 7: Address challenges to island biodiversity from climate change, and pollution (Targets 7.1 and 7.2)	😐	😐	In the case of Climate Chage - See implementation progress of measures under the NBSAP thematic areas on climate change (NBSAP Measures CC1 to CC5, and EN3 and EN4) and for pollution – See implementation of NBSAP Measures NR4 and NR6. See also progress towards Aichi Targets 8, 10 and 15.
Goal 8: Maintain capacity of island ecosystems to deliver goods and services and support livelihoods	😐 for target 8.1 and 🙂 for target 8.2	😐 for target 8.1 and 🙂 for target 8.2	See implementation progress of NBSAP measures SH1, EN3, EN6, SI10 and Aichi Target 14.
Goal 9: Maintain socio-cultural diversity of indigenous and local communities on islands (Targets 9.1 and 9.2)	😐	😐	ABS issues that involve traditional knowledge would be addressed via Malta's implementation of Article 15 of the CBD; Local communities are consulted in the formulation of policies that may affect that particular community; The ethnobotanical survey mentioned in Malta's CBD 4NR which is to result in the publication of a monograph has as yet not been completed by the local researcher. See also implementation of NBSAP measures on participatory conservation and Aichi Target 18.
Goal 10: Ensure the fair and equitable sharing of benefits arising out of island genetic Resources (Target 10.1 & 10.2)	☹	😐	Access to genetic resources from Malta is in line with the CBD Article 15 as implemented via LN 311 of 2006, on the basis of PIC and MATs See implementation progress of measures under the NBSAP thematic area on genetic resources (NBSAP Measure GR3) and Aichi Target 16.
Goal 11: Parties have improved financial, human, scientific, technical and technological capacity to implement the Convention (Target 11.3)	😐	😐	See implementation progress of measures under the NBSAP thematic area on capacity-building and Aichi Targets 19 and 20.

Table 33 – Extent of Progress in meeting Targets of the CBD PoW on Island Biodiversity

CBD Programme of Work on Inland Waters Biodiversity

This PoW deals with biodiversity that is associated with "inland waters" bearing in mind that anthropogenic activities such as water pollution and over-abstraction would be harmful to biodiversity, and noting that biodiversity maintains ecosystem services including the water cycle and flood management. Being ecologically dynamic systems, inland water ecosystems are best treated via a landscape or ecosystem approach. To this end, the aim of this PoW (as revised) is *inter alia* to further enhance the implementation of the CBD in this area at the catchment/watershed levels. The revised PoW identifies goals, objectives and activities within three programme elements: conservation, sustainable use and benefit-sharing; institutional and socio-economic enabling environment; and knowledge, assessment and monitoring. The status of implementation of the PoW in Malta is reviewed below with status of progress indicated in column 2 and implementing activities summarised in column 3. More detail is also provided for the sector on water in relation to biodiversity integration in Malta's CBD 5NR.

LEGEND & PROGRESS AT 2014:

☺ Goal/target being attained -Actions in place to support goal of the PoW	😐 Goal/target not yet attained - Actions planned/existing but further impetus is required	☹ Goal/target not being attained - Lack of actions that contribute to the goal of the PoW
38%	62%	0%

Goals of the PoW on Inland Waters Biodiversity	Status	Comments
Project element - 1: Conservation, Sustainable Use and Benefit-sharing		
1.1: To integrate the conservation and sustainable use of biological diversity into all relevant sectors of water-resource and river-basin management, taking into account the ecosystem approach	😐	Biodiversity integration into sectors of water-resource and river-basin management is mainly achieved via the implementation of the EC Water Framework Directive at a national level and via Malta's First Water Catchment Management Plan (WCMP) dated 2011. This Directive applies the ecosystem approach. One of the objectives of Malta's WCMP is to meet the specific requirements of all protected areas lying within the water catchment management district that have been designated as requiring special protection under other EU legislation. One of the eight water management issues included in the WCMP is Measure 8.2.1.4 on ensuring conservation of ecologically significant surface water systems. This recognises that: Locally surface waters (such as the Għadira reserve, the Baħrija valley system, and the Qattara fresh water pool in Gozo) support many diverse ecosystems of high ecological and conservation value. Action is required to maintain, and in some cases to restore, these areas to favourable conservation status as defined by the Habitats Directive and to ensure the continued existence of the habitats and species of conservation value that they harbour. Identified actions comprise the following: - Establish ecological flows within sub-catchments supporting Natura 2000 sites - This measure will support and be fully integrated within the

Goals of the PoW on Inland Waters Biodiversity	Status	Comments
		NATURA 2000 project. It is expected to study and establish ecological flows within selected (Special Areas of Conservation) and Special Protected areas). - Carry out a pilot project to promote integrated valley management - Integrated valley management is an overriding measure that looks at all aspects of land use and environmental management at sub catchment scale. A pilot study area will be selected in order to create a first sub catchment management plan. Central to the idea of valley management is the need to carry out studies to understand the relationship between the immediate valley environment and its ecosystems with the influences of the pressures and impacts on the sub-catchment scale. The understanding of flow regimes and the establishment of ecological flows within valley systems based on a catchment approach will feed into these IVM plans which would contribute to the restoration of ecological flows within watercourses. The status of progress reflects the need for longer term data in the context of ecological flows since data over the span is one year is only currently available.
1.2: To establish and maintain comprehensive, adequate and representative systems of protected inland water ecosystems within the framework of integrated catchment/ watershed management	☺	Important inland water ecosystems are protected as part of Malta's Ecological Network of Protected Areas. Bearing in mind that the conservation status of water-dependent species and habitats requires good water quality as well as the need to adequately conserve water bodies within protected areas, a national register is available of protected areas that are covered by the WFD in Malta. The register not only comprises areas designated for the protection of habitats or species but also includes waters used for the abstraction of drinking water, recreational waters and nutrient sensitive areas. The water register incorporates the following water-dependent protected habitat types: - Habitats that occur entirely within surface water systems, such as watercourses (e.g. Baħrija, Wied Il-Luq and Wied Lunzjata) and standing water pools (e.g. L-Għadira); - Habitats that depend on the frequent inundation of coastal waters, such as transitional marshlands and wetlands (e.g. Is-Salini, Il-Magħluq ta' Marsascala and Il-Ballut ta' Marsaxlokk), and - Habitats that depend on a connection with percolating water, such as permanent freshwater pools (Il-Qattara and L-Għadira ta' Sarraflu).
1.3: To enhance the conservation status of inland water biological diversity through rehabilitation and restoration of degraded ecosystems and the recovery of threatened species	😐	Restoration measures for inland water ecosystems that fall within Natura 2000 sites are being drawn up as part of the ongoing management process for terrestrial Natura 2000 sites. Important valley watercources are scheduled (affords

Goals of the PoW on Inland Waters Biodiversity	Status	Comments
		protection from development) thereby contributing towards their protection as natural hydrological pathways.
1.4: To prevent the introduction of invasive alien species, including exotic stocks that potentially threaten the biological diversity of inland water ecosystems, and to control and, where possible, eradicate established invasive species in these ecosystems	😐	IAS management is being integrated in the management planning process for terrestrial Natura 2000 sites which also include inland water ecosystems. IAS managements efforts also target inland water ecosystems through on *ad hoc* basis. A case in point was the initiative by a Local Council (Mosta) to commission a Management Plan for Wied L-Isperanza. A number of environmental enhancements were proposed for Wied L-Isperanza, to provide better access, improve wildlife habitat, clean up the stream and its bed, reduce the risk of flooding, make the most of the valley and to create an opportunity for the valley to be appreciated, utilised, visited and enjoyed again by both locals and tourists. management measures included the erdation of invasive alien plants.
Project element - 2: Institutional and Socio-economic Enabling Environment		
2.1: To promote the integration of conservation and sustainable use of the biological diversity of inland water ecosystems into relevant sectoral and cross-sectoral plans, programmes, policies and legislation.	😐	Using resources efficiently and sustainably is one of the goals of Malta's National Environmental Plan, which includes the policy of managing fresh water resources in an environmentally-sustainable manner. In this regard the NEP calls for the finalisation of Malta's Water Policy, the implementation of Malta's WCMP, implementation of the Nitrates Action Programme, and the development of a management regime to protect ecosystems in inland surface waters and to use them sustainably, by 2013.
2.2: To encourage the development, application and transfer of low-cost appropriate technology, non-structural and innovative approaches to water resource management and the conservation and sustainable use of the biological diversity of inland water ecosystems, taking into account any decision taken by the Conference of the Parties at its seventh meeting on technology transfer and cooperation	😐	At present within the framework of the Common Implementation Strategy, which prepares Member states for the second WFD cycle and RBMP, natural water retention measures and new technologies, such as permeable pavements or green roof technology, are being explored. In Malta the concept of green roof technology is the subject matter of the LifeMedGreenRoof project (LIFE12 ENV/MT/000732; project duration: 01-JUL-2013 to 31-JUL -2017). More detail on this project is available in relation to the NBSAP Measure SH7 earlier in the 5NR.
2.3: To provide the appropriate incentives and valuation measures to support the conservation and sustainable use of inland water biological diversity, and to remove, or reform appropriately, any perverse incentives opposing such conservation and sustainable use of ecosystems, as it relates to biodiversity conservation	😐	In the forthcoming Rural Development Plan (2014-2020), funding will be available for the creations of Valley Management Partnerships (VMPs) between land managers, land owners and local municipalities for cooperation in protecting and conserving the landscape, natural habitat and environment. VMPs will plan and implement a variety of actions within their valley in a more strategic and cost-effective manner than would be possible for individual farmer applicants.
2.4: To implement the programme of work for the Global Initiative on Communication, Education and Public Awareness (as	☺	CEPA measures are called for by Malta's NBSAP (see measures PC1 to PC4).

Goals of the PoW on Inland Waters Biodiversity	Status	Comments
adopted by the Conference of the Parties to the Convention on Biological Diversity in its decision VI/19), giving particular attention to matters relating to the conservation and sustainable use of the biological diversity of inland water ecosystems		
2.5: Promote the effective participation of indigenous and local communities and relevant stakeholders in the conservation and sustainable use of biological diversity of inland water ecosystems in accordance with national laws and applicable international obligations	😐	In the forthcoming Rural Development Plan (2014-2020), funding will be available for the creations of Valley Management Partnerships (VMPs) between land managers, land owners and local municipalities for cooperation in protecting and conserving the landscape, natural habitat and environment. VMPs will plan and implement a variety of actions within their valley in a more strategic and cost-effective manner than would be possible for individual farmer applicants.
Project element - 3: Knowledge, Assessment and Monitoring		
3.1: To develop an improved understanding of the biodiversity found in inland water ecosystems, how these systems function, their ecosystem goods and services and the values they can provide	😐	Inland water ecosystems have been the subject matter of various undergraduate or postgraduate research undertaken by students of the University of Malta reading for a Bachlor of Science or Master of Science degrees. Malta is as yet to undertake it MAES exercise.
3.2: To develop, based on inventories, rapid and other assessments applied at the regional, national and local levels, an improved understanding of threats to inland water ecosystems and responses of different types of inland water ecosystems to these threats	☺	Pressure and impact assessment is done in line with the requirements of Article 17 of the Habitats Directive.
3.3: To ensure projects and actions with the potential to impact negatively on the biological diversity of inland water ecosystems are subjected, in accordance with national legislation and where appropriate, to suitably rigorous impact assessments, including consideration of their potential impact on sacred sites and on lands and waters traditionally occupied or used by indigenous and local communities	☺	The carrying out of environmental assessments as required by law is standard practice within Malta's spatial planning.
3.4: To introduce and maintain appropriate monitoring arrangements to detect changes in the status and trends of inland water biodiversity	☺	Monitoring is done in line with the requirements of the WFD and EC Nature Directives, the requirements of which are transposed in Maltese legislation. The development of a National Biodiversity Monitoring Strategy is valled for by Malta's NBSAP (see measure BM1) while the management Planning Process for terestrial Natura 2000 sites have identified as one of its deliverables the drawing up of standardised monitoring for species and habitat types.

Table 34 - Extent of Progress in meeting the Goals of the CBD PoW on Inland Waters Biodiversity

CBD Programme of Work on Marine & Coastal Biodiversity

This PoW strives to halt the loss of marine and coastal biological diversity and secure its capacity to provide goods and services. Parties are urged to take the necessary short-, medium- and long-term measures to respond to the loss or reduction of marine biological diversity. Measures encompass marine and coastal protected areas; marine protected areas in areas beyond national jurisdiction (ABNJ); assessment, monitoring and research; mariculture; conservation and sustainable use of deep seabed genetic resources beyond national jurisdiction; and conservation and sustainable use of biological diversity in marine areas beyond the limits of national jurisdiction.

The goals and targets of this PoW are grouped under 5 programme elements. This POW is deemed relevant in the context of the EU MSDF, the surface waters of the WFD and also coastal and marine aspects of the Nature Directives. Indeed, measures to implement these EU directives at a national level would also positively contribute to the implementation of the CBD PoW on marine and coastal biodiversity by Malta. The table below presents the status of implementation of the PoW in Malta.

LEGEND & PROGRESS AT 2014:

☺ Objective being attained -Actions in place to support goal of the PoW	😐 Objective not yet attained - Actions planned/existing but further impetus is required	☹ Objective not being attained - Lack of actions that contribute to the goal of the PoW
20%	80%	0%

Operational Objectives of the PoW on Marine and Coastal Biodiversity	Status	Comments
Programme Element – 1: Implementation of integrated marine and coastal area management (IMCAM)		
1.1: To apply appropriate policy instruments and strategies, including building of capacity, for the effective implementation of IMCAM	😐	An Integrated Maritime National Strategy Committee has been set in July 2013 up to develop, monitor and evaluate the implementation process of the National Integrated Maritime Policy. The first task of the committee is to identify the main themes and issues that affect directly the country in the maritime sector and to compile a consultation document.
1.2: To undertake direct action to protect the marine environment from negative impacts	☺	Malta implements various EU envirinmentally-related Directives and Regulations, as well as the Common Fisheries Policy, with the aim of protecting the marine environment from negative impacts such as pollution and unsustainable fishing. Pressures and threats on the marine environment have also been assessed both under the framework of the Habitats Directive in the context of species and habitats of European Community interest as well as the MSFD through Malta's Initial Assessment.
1.3: To develop guidelines for ecosystem evaluation and assessment, paying attention to the need to identify and select indicators,	😐	Malta is yet to carry out assessment of the status of ecosystems and their services and map these with subsequent valuation. An EU Horizon 2020 project

Operational Objectives of the PoW on Marine and Coastal Biodiversity	Status	Comments
including social and abiotic indicators that distinguish between natural and human-induced effects.		related to the mapping of ecosystem services is underway with the participation of the Institute of Applies Science at MCAST. Such project shall positively contribute to this exercise in Malta. The assessment of habitats as per requirements of Article 17 of the Habitats Directive and the requirements of the initial assessment of the MSFD, do shed insight to the state of ecosystems in the marine environment.
Programme Element – 2: Marine and coastal living resources		
2.1: To promote ecosystem approaches to the conservation and sustainable use of marine and coastal living resources, including the identification of key variables or interactions, for the purpose of assessing and monitoring, first, components of biological diversity; second, the sustainable use of such components; and, third, ecosystem effects.	☺	The EC Water Framework Directive and Marine Strategy Framework Directive both apply the ecosystem approach within their goals and requirements for action at a national level. The same may also be said in the case of the EC Nature Directives. The Habitats Directive in particular requires the carrying out of an appropriate assessment as the procedure to be followed when planning new developments that might affect a Natura 2000 site.
2.2: To make available to the Parties information on marine genetic resources in marine areas beyond national jurisdiction and, as appropriate, on coastal and marine genetic resources under national jurisdiction from publicly available information sources.	😐	Information on coastal and marine genetic resources under national jurisdiction can be obtained by referring to the schedules listing those species that are afforded national protection. Malta currently implements Article 15 of the CBD with regards to access to genetic resources for which Malta has sovereign rights. Malta currently implements Article 15 of the CBD with regards to access to genetic resources for which Malta has sovereign rights.
2.4: To enhance the conservation and sustainable use of biological diversity of marine living resources in areas beyond the limits of national jurisdiction	😐	Cooperation in the context on ABNJ is covered by Malta's NBSAP – Measure RD3. Malta is also currently following global discussions on an International Agreement on ABNJ under UNCLOS. At present fishing vessels flying the MLA flag in ABNJ are regulated through national fisheries laws e.g. as regards mesh size, no trawling beyond 1000 m (depth), tuna quotas, and prohibition of the use of certain fishing gear.
Programme Element – 3: Marine and Coastal Protected Areas		
3.1: To establish and strengthen national and regional systems of marine and coastal protected areas integrated into a global network and as a contribution to globally agreed goals.	☺	As of end 2011, Malta had 27 terrestrial sites covering 41.8km^2 or 13.1% of land area, and 1 marine area of 8.5km^2 forming part of the network. Four additional marine sites were submitted to the European Commission in 2011 to form part of the Natura 2000 network. These new sites were primarily identified because they provide protection for over 80% of the *Posidonia* beds found in the Maltese territorial waters, but also include other marine habitat types and species, particularly the marine endemic Maltese topshell, *Gibbula nivosa*, sandbanks and reefs. These sites were adopted as Natura 2000 sites on the 16 November 2012. The 5 marine sites in all cover an

Operational Objectives of the PoW on Marine and Coastal Biodiversity	Status	Comments
		area of 190.8km^2. Moreover, in 2013 Malta designated its first Marine Important Bird Area (IBA) around the Malta-Gozo channel. A number of EU co-funded projects are ongoing which will shed light on any new additional marine sites to designate. The ongoing LIFE+ Bahar Project is aimed at assessing selected marine habitat types and designating additional Natura 2000 sites. The ongoing EU funded Malta Seabird Project aims at creating a catalogue of marine Important Bird Areas (IBAs) for three seabird species; *Puffinus yelkouan* (Yelkouan Shearwater), *Calonectris diomedea* (Cory's Shearwater) and *Hydrobates pelagicus* (European Storm Petrel). This project shall employ various bird tracking methodologies to gain further knowledge on key areas, which sites shall then be recommended as marine Special Protection Areas. The ongoing LIFE Migrate Project aims at enabling studies to be carried out on the status of the population of the loggerhead turtles (*Caretta caretta*) and of the bottlenose dolphins (*Tursiops truncatus*) in the Maltese Islands. This project, aims to identify any potential hotspots for the species (such as potential feeding areas or important migratory routes), to assess the conservation status of the species, and to analyse adequate sites for protection, with the aim of designating relevant SCIs for these two species.
3.2: To enhance the conservation and sustainable use of biological diversity in marine areas beyond the limits of national jurisdiction	😐	Cooperation in the context on ABNJ is covered by Malta's NBSAP – Measure RD3. Malta is also currently following global discussions on an International Agreement on ABNJ under UNCLOS. At present fishing vessels flying the MLA flag in ABNJ are regulated through national fisheries laws e.g. as regards mesh size, no trawling beyond 1000 m (depth), tuna quotas, and prohibition of the use of certain fishing gear.
3.3: To achieve effective management of existing marine and coastal protected areas	😐	The management effectiveness on one of Malta's marine protected areas has been assessed as part of a project. The Blue Flag Programme is represented in Malta by Nature Trust. Awards achieved for 2013 included blue flag status for 8 beaches and 1 for beach of quality: - St. George's Bay (SGB) - Blue Flag - Buġibba Perched Beach (BPB) - Blue Flag - Mellieħa Bay (MB) - Blue Flag - Qawra Point - Blue Flag - Ramla l-Ħamra (Gozo)- Blue Flag - Għajn Tuffieħa - Blue Flag - Golden Bay - Beach of Quality - Fond Għadir - Blue Flag - Paradise Bay Hotel Resort - Blue Flag[169].

[169] http://www.mta.com.mt/blueflag

Operational Objectives of the PoW on Marine and Coastal Biodiversity	Status	Comments
3.4: To provide support for and facilitate monitoring of national and regional systems of marine and coastal protected areas	😐	Preparation is underway to compile the second Water Catchment Management Plan, and in so doing, fill those gaps identified by the comprehensive monitoring carried out in 2012/13 in coastal and protected inland surface waters. MEPA issued a service contract for the development of a long-term strategy for the marine environment. The main aim of the contract is to improve MEPA's overall capacity to fulfil its environmental monitoring responsibilities in the most effective and cost-efficient manner possible. Amongst the tasks of the contract are: - To review monitoring obligations pertaining to the marine environment and perform a critical analysis of the currently established monitoring programmes, technical capacities, and institutional arrangements; - To harmonise and streamline monitoring obligations stemming from the Marine Strategy Framework Directive (MSFD) with other existing or emerging monitoring requirements/programmes, and develop one integrated National Marine Monitoring Strategy; and - To set up within the Marine Monitoring Strategy, a marine monitoring programme for Malta in line with Article 11 of the MSFD. *Pinna nobolis* in MPAs has been monitored through Medpan North projects in 2006 and 2012. Studies using citizen science have also been undertaken in 2013 to identify the presence of specific marine invasive species.
3.5: To facilitate research and monitoring activities that reflect identified global knowledge gaps and priority information needs of management of marine and coastal protected areas.	😐	Three major research projects – Life Migrate, Life Bahar and LIFE Seabirds – are currently ongoing and will address existing knowledge gaps.
Programme Element – 4: Mariculture		
4.1: To promote use of techniques, which minimise adverse impact of mariculture on marine and coastal biological diversity.	😐	This objective is more or less addressed by Malta's NBSAP Measure SI4 which calls for good-management practices and aqua-environmental measures for sustainable management of the aquaculture sector. The "Aquaculture Strategy for the Maltese Islands – Towards Sustainability" was adopted in June 2014. This Strategy sets out a framework for the period 2014 to 2025 on the underlying principle of improving competitiveness whilst promoting sustainable practices.
Programme Element – 5: Invasive alien species		
5.1: To achieve better understanding of the pathways and the causes of the introduction	😐	Malta has assessed marine pathways of introduction as part of its Initial Assessment in line

Operational Objectives of the PoW on Marine and Coastal Biodiversity	Status	Comments
of alien species and the impact of such introductions on biological diversity		with requirements of the MSFD. Moreover as part of the MedPan North Project, studies using citizen science have been undertaken in 2013 to identify the presence of specific marine invasive species in such protected areas. Under the forthcoming EU Regulation of the European Parliament and of the Council on the Prevention and Management of the Introduction and Spread on Invasive Alien Species, Member States will be required to carry out any assessment of pathways and for those identified as of priority to address them via action plans.
5.2: To put in place mechanisms to control all pathways, including shipping, trade and mariculture, for potential invasive alien species in the marine and coastal environment	😐	Malta's NBSAP – Masure BI4 requires the drawing up of national codes of conduct for those sectors that can aid the introduction and spread of invasive species. Under the forthcoming EU Regulation of the European Parliament and of the Council on the Prevention and Management of the Introduction and Spread on Invasive Alien Species, Member States will be required to carry out any assessment of pathways and for those identified as of priority to address them via action plans.
5.3: To maintain an incident list on introductions of alien species	😐	This objective is integrated in Malta's NBSAP – Measure BI1. The forthcoming EU Regulation of the European Parliament and of the Council on the Prevention and Management of the Introduction and Spread on Invasive Alien Species foresees restrictions applied to IAS listed as of EU concern combined with other measures. This Regulation once in force will apply to all Member States, including Malta. Malta's initial assessment as required by the MSFD has comprised an assessment on non-indigenous species. An assessment of selected marine invasive species in marine protected areas using citizen science was also implemented as part of the MedPan North project in Malta.

Table 35 - Extent of Progress in implementing the CBD PoW on Marine and Coastal Biodiversity

CBD Programme of Work on Agricultural Biological Diversity

The term "agricultural biodiversity" encompasses all components of biological diversity of relevance to food and agriculture, including components of biological diversity that constitute, and sustain the agro-ecosystem, its structure and processes. The objectives of this PoW are the following:

- To promote the positive effects and mitigate the negative impacts of agricultural systems and practices on biological diversity in agro-ecosystems and their interface with other ecosystems;
- To promote the conservation and sustainable use of genetic resources of actual and potential value for food and agriculture; and
- To promote the fair and equitable sharing of benefits arising out of the use of genetic resources.

The status of implementation of the PoW in Malta is provided below. More information on the integration of biodiversity in the agriculture and rural development sector is provided in Malta's CBD 5NR under section 2.9.1.

LEGEND & PROGRESS AT 2014:

☺ Objective being attained -Actions in place to support goal of the PoW	😐 Objective not yet attained - Actions planned/existing but further impetus is required	☹ Objective not being attained - Lack of actions that contribute to the goal of the PoW
0%	100%	0%

Programme Elements and Goals of the PoW on Agricultural Biodiversity	Status	Comments
Programme element 1 - Assessments		
Operational objective: To provide a comprehensive analysis of status and trends of the world's [in this case national] agricultural biodiversity and of their underlying causes (including a focus on the goods and services agricultural biodiversity provides), as well of local knowledge of its management.	😐	Malta's NBSAP Measure GR1 calls for the conservation of distinct plant and animal genetic resources for food and agriculture. There is however limited information about endemic genetic resources in food and agriculture. In most cases, although it is believed that certain varieties of cultivated crops and certain livestock breeds are indeed indigenous to the Maltese Islands; this has not been substantiated with scientific evidence and genetic testing. In some cases, characterisation trials have been launched for some varieties, and interest in the re-introduction and preservation of livestock breeds is increasing. The scope of Measure 214 Sub-Measure 10 is to conserve and possibly also reverse the trend of erosion of genetic resources in agriculture, including plant species and varieties and livestock breeds. The sum of €2,500,000 is allocated to Measure 214 (sub measure 10) under the Rural Development Plan for Malta 2007-2013. The EAFRD shall be financing 100% of the selected projects under this sub-measure. The project "The Study and Sustainable Conservation of Varieties of Plants" is being funded by the EAFRD. One of the targets of this project is the safeguard of the local fruit producing plant's germplasm through its conservation and, where necessary, its enhancement and utilisation through certification programmes.
Programme element 2: Adaptive management		
Operational objective: To identify management practices, technologies and policies that promote the positive and mitigate the negative impacts of agriculture on biodiversity, and enhance productivity and the capacity to sustain livelihoods, by expanding	😐	Good agricultural practices are defined in Malta's COGAP. Malta has also defined "Good Agricultural and Environmental Conditions" (GAECs) on the basis of the framework set up of Council Regulation (EC) No 73/2009 establishing common rules for direct support

Programme Elements and Goals of the PoW on Agricultural Biodiversity	Status	Comments
knowledge, understanding and awareness of the multiple goods and services provided by the different levels and functions of agricultural biodiversity.		schemes for farmers under the common agricultural policy and establishing certain support schemes for farmers (repealed Regulation EC No 1782/2003), while taking into account the specific characteristics of Maltese conditions. Maltese Farmers that receive direct payments under Pillar I of the Common Agricultural Policy are required to abide to "Statutory Management Requirements" (SMRs) in the field of the environment, food safety, plant and animal health, and animal welfare; and to keep their land in "Good Agricultural and Environmental Conditions" (GAECs) in compliance with standards established by Malta. The second pillar of the CAP focuses on the sustainable development of rural areas by enabling member states to adopt measures that help in curbing negative ecological impacts of agriculture and improving positive impacts via multi-annual rural development measures. Malta is as yet to adopt its RDP for the financial perspective 2014-2020. The project titled *Information and communications campaign for the proper use and management of nitrates in agriculture and livestock breeding* (LIFE10INF/MT/000092) is designed to provide farmers and livestock breeders with information and training to act in accordance with the European Nitrates Directive and the associated Action Plan. Throughout the campaign, all 849 full-time farmers and all 1,739 part-time farmers who hold more than 1.5 hectares of land will be receiving individual training. Training sessions will also be held with all the 925 livestock breeders to communicate effectively the key information messages of the campaign so that the project's objectives are realised. More information on this project is available from: http://agric.gov.mt/info_nitrates?l=1
Programme element 3: Capacity-building		
Operational objective: To strengthen the capacities of farmers, indigenous and local communities, and their organizations and other stakeholders, to manage sustainably agricultural biodiversity so as to increase their benefits, and to promote awareness and responsible action.	😐	The implementation of agri-environment measures and the role of Farm Advisory Systems in line with Malta's RDP 2007-2013 contributes to this objective of the PoW. Malta is as yet to adopt its RDP for the financial perspective 2014-2020. Various rural festivities are undertaken in Malta throughout the year and focus on particular Maltese produce. The festivities are organised by the Rural Festivities Section within the Parliamentary Secretariat for Agriculture, Fisheries and Animal Right.
Programme element 4: Mainstreaming		

Programme Elements and Goals of the PoW on Agricultural Biodiversity	Status	Comments
Operational objective: To support the development of national plans or strategies for the conservation and sustainable use of agricultural biodiversity and to promote their mainstreaming and integration in sectoral and cross-sectoral plans and programmes.	😐	Malta's NEP mentions that in order to better integrate environmental considerations into agricultural practices, enhancing the stewardship role of agriculture in protecting the rural environment should continue through rural development and other agricultural programmes. With respect to the latter, the NEP calls for agricultural programmes that address agricultural land abandonment; habitat loss and fragmentation; soil erosion; training of farmers in more environmentally friendly forms of agriculture including organic farming and the planting and maintenance of indigenous tree windbreakers and shelterbelts; protection of cultural landscapes; and, enhanced monitoring and enforcement. Malta is as yet to adopt its RDP for the financial perspective 2014-2020.

Table 36 – Extent of Progress in implementing the CBD PoW on Agricultural Biodiversity

CBD Programme of Work on Dry & Sub-humid Land

The overall aim of this PoW is to promote the three objectives of the CBD in dry land, Mediterranean, arid, semi-arid, grassland, and savannah ecosystems. The programme is divided into two parts, one on "assessments" and another on "targeted actions in response to identified needs"; both elements are to be implemented in parallel. The status of implementation of the PoW in Malta is provided in the table below.

LEGEND & PROGRESS AT 2014:

☺ Objective being attained -Actions in place to support goal of the PoW	😐 Objective not yet attained - Actions planned/existing but further impetus is required	☹ Objective not being attained - Lack of actions that contribute to the goal of the PoW
50%	50%	0%

PoW on Dry and Sub-humid Land	Status	Comments
Programme Element 1: Assessments		
Operational Objective: To assemble and analyse information on the state of the biological diversity of dry and sub-humid lands and the pressures on it, to disseminate existing knowledge and best practices, and to fill knowledge gaps, in order to determine adequate activities.	☺	The status of terrestrial Annex I habitat types of community interest is assessed in line with the requirements of the EC Habitats Directive. Habitats that fall within the category covered by the PoW are: 1240 Vegetated sea cliffs of the Mediterranean coasts with endemic *Limonium* spp. 5330 Thermo-Mediterranean and pre-desert scrub 5410 West Mediterranean clifftop phryganas (*Astragalo-Plantaginetum subulatae*)

PoW on Dry and Sub-humid Land	Status	Comments
		5420 *Sarcopoterium spinosum* phryganas 5430 Endemic phryganas of the *Euphorbio-Verbascion* 6220 Pseudo-steppe with grasses and annuals of the *Thero-Brachypodietea* 8210 Calcareous rocky slopes with chasmophytic vegetation The identification of adequate activities to safeguard these is addressed through the management planning process for terrestrial Natura 2000 sites which also has identified the deliverable to dreveloping standardised monitoring methodologies.
Programme Element 2: Targeted actions in response to identified needs		
Operational Objective: To promote the conservation of the biological diversity of dry and sub-humid lands, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of its genetic resources, and to combat the loss of biological diversity in dry and sub-humid lands and its socio-economic consequences.	😐	The NBSAP includes measures that would positively contribute to this objective of the PoW in the context of species and habitat conservation, sustainable use of components including of soil and threat mitigation.

Table 37 - Extent of Progress in Implementing the CBD PoW on Dry and Sub-Humid Land

CBD Programme of Work on Protected Areas

Protected areas are viewed as "cornerstones of biodiversity conservation" and their establishment and management are called for not only by the CBD (Article 8), but also other MEAs, EU and domestic policy. Protected areas are addressed under the CBD framework as a cross-cutting issue and also feature as an integral element of CBD PoW on thematic areas. This PoW proposes measures under four interlinked elements, which are intended to be mutually reinforcing and cross-cutting in their implementation. This PoW also takes into account the ecosystem approach in the context of a framework within which the relationship of protected areas to the wider landscape and seascape can be understood, and the goods and services flowing from protected areas can be valued. The status of implementation of the PoW in Malta is provided below. Detailed information on measures pertaining to protected areas and that contribute towards the implementation of the CBD PoW on Protected Areas is provided earlier in the 5NR.

LEGEND & PROGRESS AT 2014:

☺ Goal/target being attained -Actions in place to support goal of the PoW	😐 Goal/target not yet attained - Actions planned/existing but further impetus is required	☹ Goal/target not being attained - Lack of actions that contribute to the goal of the PoW
47%	53%	0%

Programme Elements and Goals of the PoW on Protected Areas	Status as reported in Malta's 4NR	Status as reported in Malta's 5NR	Comments
Programme Element 1: Direct Actions for planning, selecting, establishing, strengthening and managing protected area systems and sites			
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	😐	☺	This goal is reflected in the NBSAP measure EN1. While Malta reached sufficiency in the designation of terrestrial Natura 2000 sites (not to mention other terrestrial designations), significant progress has been made with respect to designations in the marine environment. Malta's 5 marine SACs, which are all of international importance, cover 190.8km^2 of territorial waters. On the other hand, terrestrial SACs cover 42km^2 or 13.3% of land area. Malta also has 13 special protection areas (SPAs) covering 16.5km^2 or 5.2% of land area. Ongoing projects (e.g. LIFE Migrate Project, LIFE Malta Seabird Project and LIFE Bahar Project) shall also indicate the need for any additional designations for the loggerhead turtle, the bottle-nosed dolphin, for seabirds and for marine habitats. More detail is provided earlier in this report in relation to Q7.
Goal 1.2: To integrate protected areas into broader land- and seascapes and sectors so as to maintain ecological structure and function	😐	😐	This goal is reflected in the NBSAP Measure EN2. NBSAP Measures EN3 and EN4 are also relevant to reaching connectivity and integration. Evironmental assessment tools assist in such integration in the context of development planning. The management plans developed under the EAFRD project also address ecological connectivity and integration as reflected in the formulation of conservations objectives for the respective protected areas.
Goal 1.3: To establish and strengthen regional networks, transboundary protected areas (TBPAs) and collaboration between neighbouring protected areas across national boundaries	☺ (for strengthening regional PA networks) ☹ (currently for designation of PAs in ABNJ, bearing in mind national contributions to regional	☺ (for strengthening regional PA networks) 😐 (currently for designation of PAs in ABNJ, bearing in mind national contributions to	TBPAs in the terrestrial environment are not applicable to Malta as an isolated island. Malta contributes 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. Malta is currently participating in discussions on the identification of EBSAs in the Mediterranean Region. The national ecological network of protected areas in the Maltese Islands is strengthened via multiple designations per site not to mention coherence via overlapping boundaries/buffer zones in certain cases.

Programme Elements and Goals of the PoW on Protected Areas	Status as reported in Malta's 4NR	Status as reported in Malta's 5NR	Comments
	ecological networks)	regional ecological networks)	
Goal 1.4: To substantially improve site-based protected area planning and management	😐	☺	The development of the management plans and conservation objectives for each relevant protected area will contribute towards substantially improving management. Site planning for additional marine sites shall be explored via one the findings of ongoing EU co-funded projects. Malta has completed the management planning process for terrestrial sites under the EAFRD project. More detail is provided earlier in this report.
Goal 1.5: To prevent and mitigate the negative impacts of key threats to protected areas	😐	😐	Malta, applies, as appropriate, environmental impact assessments to plans or projects with the potential to have effects on protected areas. The development of the management plans and conservation objectives for each relevant protected area will contribute towards substantially improving prevention and mitigation of key threats. Enforcement action is taken against illegal development actitities and those in breach of development permits.
Programme Element 2: Governance, Participation, Equity and Benefit Sharing			
Goal 2.1: To promote equity and benefit-sharing	☹	😐	The NBSAP includes the measure EN6: *A range of governance types for long term management of protected areas is in place, based on good governance principles*.
Goal 2.2: To enhance and secure involvement of indigenous and local communities and relevant stakeholders	☹	☺	Defining the conservation objectives and identifying management measures for each site is done with intensive stakeholder involvement and participation. Other ways of local engagement may also be explored.
Programme Element 3: Enabling Activities			
Goal 3.1: To provide an enabling policy, institutional and socio-economic environment for protected areas	☹	😐	The enabling policy is being built via the management planning process and via ongoing and planned projects. Resource mobilisation however remains a crucial need for enabling effective management on the ground.
Goal 3.2: To build capacity for the planning, establishment and management of protected areas	😐	😐	Capacity-building is built via ongoing and planned projects. Resource mobilisation however remains a crucial need for enabling effective management on the ground. The NBSAP also includes the measure CB2 Implementation timeline 2018-2020): *Site managers entrusted with the responsibility of managing protected areas, where applicable, are well-trained and appropriately equipped*

Programme Elements and Goals of the PoW on Protected Areas	Status as reported in Malta's 4NR	Status as reported in Malta's 5NR	Comments
			to carry out their duties effectively and based on best-practice.
Goal 3.3: To develop, apply and transfer appropriate technologies for protected areas	😐	☺	Appropriate (and state of the art) technologies in the context of surveying, monitoring, telemetry, modelling, and mapping are applied in relation to various ongoing EU funded projects and also for instance when undertaking environmental assessments to assess any potential impacts on protected areas (including on species and habitats therein).
Goal 3.4: To ensure financial sustainability of protected areas and national and regional systems of protected areas	😐	😐	Innovative financing opportunities for marine Natura 2000 sites were explored as part of the afore-mentioned MedPAN North Project under the Programme Med. This aspect of the project consisted of the following tasks: *Task A: Analysing the financial requirements of local marine protected areas* – This involved working out the costs involved for the sustainable management of marine protected areas. The estimates for each MPA addressed the following activities as a minimum: - Gathering data to assess the conservation status of the habitats and species for which the site was designated; - Establishing conservation objectives for such habitats and species; - Developing conservation measures to implement each of the above-mentioned objectives; - Implementation of site-specific conservation measures. The outcome was a study of the financial input required towards the sustainable management of the Marine Protected Area network. *Task B: Proposals of activities for the financing of local marine protected areas* **-** For the estimates provided for task A, potential sources of funding identified. With regard to self-financing opportunities, a number of activities, which would contribute to the financial sustainability of the local marine protected areas are proposed. The activities were described together with an indication of the revenue expected to be generated from each activity. Best practice opportunities in other Mediterranean or European countries were also considered. The outcome is a report with recommendations of activities towards the self-financing requirements of

Programme Elements and Goals of the PoW on Protected Areas	Status as reported in Malta's 4NR	Status as reported in Malta's 5NR	Comments
			the Marine Protected Area network. *Task C: Proposing a marketing strategy* - A report outlining a marketing strategy targeting, the private sector, any potential sponsors, and any other investors in biodiversity embracing innovative techniques that can be used in order to attract these investors was produced under Task C. *Task D: Setting up of an administrative framework* – This produced a report demarcating the administration of funds arising from the Marine Protected Areas network. The administrative framework draws on systems adopted by other countries. Further consideration of these outcomes of these tasks is required in order to assess which oportunities to apply in practice. When considering terrestrial sites, each Management Plan includes an Annex in which Cost Recovery Mechanisms for the site in question are identified. A separate document on Sustainable Tourism in Natura 2000 sites was also prepared to cover the whole network of Maltese sites.
Goal 3.5: To strengthen communication, education and public awareness	☺	☺	The Natura 2000 Campaign under the EAFRD project positely contributed to this goal. The MedPAN North project also included communication and awareness measures.
Programme Element 4: Standards, Assessment and Monitoring			
Goal 4.1: To develop and adopt minimum standards and best practices for national and regional protected area systems	☹	😐	This goal is reflected in the NBSAP Measure EN7 (timeline 2015-2017) - *Standards, criteria and indicators are established to evaluate the effectiveness of protected area management.* Malta (MEPA) participated in the MedPAN North Project which included sharing experiences and good practices amongst each participating country (23 organisations from 11 countries), suggest solutions to management problems of marine protected areas, and improve capacity.
Goal 4.2: To evaluate and improve the effectiveness of protected areas management	😐	😐	Management effectiveness is a consideration when reviewing existing management plans on the basis of adaptive management.
Goal 4.3: To assess and monitor protected area status and trends	😐	☺	This goal is mirrored in one of the state of the environment indicators that is adopted by Malta. Status of protected areas is also reported in line with the EC Nature Directives requirements.
Goal 4.4: To ensure that scientific knowledge contributes to the establishment and effectiveness of	😐	☺	Scientific knowledge is currently being garnered via ongoing projects, which include undertaking survey in the field, and shall

Programme Elements and Goals of the PoW on Protected Areas	Status as reported in Malta's 4NR	Status as reported in Malta's 5NR	Comments
protected areas and protected area systems			contribute the necessary impormation for further site establishment where deemed required.

Table 38 - Extent of Progress in Implementing the CBD PoW on Protected Areas

Progress towards Targets of the Global Strategy for Plant Conservation 2011-2020

The Global Strategy for Plant Conservation (GSPC) addresses the challenges posed by threats to plant diversity and its overall purpose is to achieve the three objectives of the CBD, particularly for plant diversity. The aim of the GSPC is to halt the continuing loss of plant diversity and to secure a positive, sustainable future where human activities support the diversity of plant life, and where in turn the diversity of plants support and improve livelihoods and wellbeing. The Strategy considers plants in the terrestrial, inland water and marine environments. The status of implementation of the GSPC in Malta is provided below.

LEGEND & PROGRESS AT 2014:

☺ Target being attained -Actions in place to support the Target	😐 Target not yet attained - Actions planned/existing but further impetus is required	☹ Target not being attained - Lack of actions that contribute to the Target
29%	65%	6%

Objectives and Targets of the GSPC	Status on Previous GSPC	Status on updated GSPC	Comments
Objective I: Plant diversity is well understood, documented and recognised			
Previous Target 1: A widely accessible working list of known plant species, as a step towards a complete world flora **Updated Target 1:** An online flora of all known plants.	😐	😐	Envisaged as part of NBSAP Measure PA2 to be implemented between 2015-2017 on the basis of completed commissioned research together with any other required studies; New records of plant species continue to be made with the most recent being that of *Polypodium vulgare* ssp. *melitense*. This new record has increased the number of currently present pteridophytes to 10 species. A sizeable proportion of fungal mycoflora in Malta remains unidentified or partially identified.
Previous Target 2: A preliminary assessment of the conservation status of all known plant species, at national, regional and international levels **Update Target 2:** An assessment of the conservation status of all known plant species, as far as possible, to guide	😐	😐	So far the assessment of conservation status focuses mainly on plant species of EU Community Importance that are found in the Maltese territory. This includes a total of 11 vascular plants and 4 non-vascular plants. As noted in the CBD 4NR, future priorities included the need to extend the assessment of conservation status to species of national importance, and, to update Plant Red Lists. Both priorities are integrated in Malta's NBSAP – measures SH2 and PA2. The information-basis for updating the Red List for plants is in part available, and is supplemented by *ad hoc* field work.

Objectives and Targets of the GSPC	Status on Previous GSPC	Status on updated GSPC	Comments
conservation action.			
Previous Target 3: Development of models with protocols for plant conservation and sustainable use, based on research and practical experience **Updated Target 3:** Information, research and associated outputs, and methods necessary to implement the Strategy developed and shared.	😐	😐	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 and via dissertation projects by University students. See implementation progress of NBSAP Measures BM1, BM2 and CB4. An interpretation manual for marine habitats has been compiled as part of the MedPAN North Project (under the Programme Med).
Objective II: Plant diversity is urgently and effectively conserved			
Previous Target 4: At least 10 per cent of each of the world's ecological regions effectively conserved **Updated Target 4:** At least 15 per cent of each ecological region or vegetation type secured through effective management and/or restoration.	😐	☺	See implementation progress of NBSAP Measure SH3. Vegetation types associated with woodland and maquis, rocky habitats, grasslands, sclerophyllous scrubs, freshwater habitats, dune habitats and coastal habitats are covered by Malta's Ecological Network of Protected Areas. As to the prioritised restoration framework for contributing to the 15% target of restored ecosystems, ecosystems, it is currently based on the restoration targets set by Natura 2000 sites' management plans. "Guidelines on Managing Non-Native Plant Invaders and restoring Native Plant communities in terrestrial settings in the Maltese Islands" have been adopted by MEPA in 2013. Such guidelines address issues related to the control and/ or eradication of invasive alien species, and the restoration of native plant communities. 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.
Previous Target 5: Protection of 50 per cent of the most important areas for plant diversity assured **Updated Target 5:** At least 75 per cent of the most important areas for plant diversity of each ecological region protected with effective management in place for conserving plants and their genetic diversity.	Terrestrial ☺ Marine 😐	Terrestrial ☺ Marine 😐	Malta's national target is in line with Aichi Target 5. The national target requires in part that *the percentage cover of "forests and semi-natural areas" has not decreased below the CORINE land cover data of 2006.*Important terrestrial areas for plant diversity are integrated in Malta's terrestrial protected areas which are covered by a management planning process. The Life Bahar Project will gather existing and new data on the location, range and conservation status of Annex I marine habitats as listed in the Habitats Directive, primarily: Sandbanks which are slightly covered by sea water all the time (code 1110), Reefs (code 1170); and Submerged or partially submerged sea caves (code 8330). See also implementation progress of EN1 and EN2.
Previous Target 6: At least 30 per cent of production lands managed consistent with the conservation of	😐	😐	Malta has no equivalent quantified target at a national level. Instead Malta's national target is in line with Aichi Target 7. Production lands in Malta refer to lands where the primary purpose is agriculture (including

Objectives and Targets of the GSPC	Status on Previous GSPC	Status on updated GSPC	Comments
plant diversity **Updated Target 6:** At least 75 per cent of production lands in each sector managed sustainably, consistent with the conservation of plant diversity.			horticulture). Commercial wood production is not practised and grazing is extremely rare and small scale. 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. In 2012, over 25% of the registered farmers had an agri-environmental measure commitment, with the total area under agri-environmental payments being 2,052.6ha. All farmers who have a Less Favoured Area commitment and or receive support under the direct aid are obliged to observe the cross compliance rules. These farmers amount to over 6000 farmers. Between 2010 and 2011, the area of land cultivated using organic farming methods increased by 17.5%, covering 25ha of the Maltese Islands in 2011. This represented approximately 0.21% of total agricultural land and 0.22% of Utilised Agricultural Area (UAA). In 2011 there were 15 certified organic producers in the Maltese Islands. See also implementation progress of NBSAP Measure SI3. As regards aquaculture, the government of Malta is working to promote aqua-environmental aquaculture and foresees a shift to offshore aquaculture and environment friendly aquaculture through sustainable methods.
Previous Target 7: 60 per cent of the world's threatened species conserved *in situ*. **Updated Target 7:** At least 75 per cent of known threatened plant species conserved *in situ*.	☺	☺	Known threatened plants are covered by Malta's Ecological Network of Protected areas and are also afforded strict legal protection via the Flora, Fauna and Natural Protection Regulations, 2006 (LN 311 of 2006 as amended) and the Trees and Woodland Protection Regulations, 2011 (LN 200 of 2011). See implementation progress of NBSAP Measure SH4, SH6, and EN2.
Previous 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 **Updated Target 8:** At least 75 per cent of threatened plant species in *ex situ* collections, preferably in the country of origin, and at least 20 per cent available for recovery and restoration	☹	☹	See implementation progress of NBSAP Measures GR2 which also addresses crop varieties as well as wild relatives as well as Measure SH4. The main *ex situ* collection of threatened plants is that held at the Argotti Botanic Garden. Focus is mainly on endemic plants - *Tetraclinis articulata*; *Palaeocyanus crassifolius*; *Helichrysum melitense*; *Darniella melitense*; *Cremnophyton lanfrancoi* and *Hyoseris frutescens*.

Objectives and Targets of the GSPC	Status on Previous GSPC	Status on updated GSPC	Comments
programmes.			
Previous 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 **Updated Target 9:** 70 per cent of the genetic diversity of crops including their wild relatives and other socio-economically valuable plant species conserved, while respecting, preserving and maintaining associated indigenous and local knowledge.	😐	😐	See implementation progress of NBSAP Measure GR1 which also addresses crop varieties as well as wild relatives. The Plant Health Directorate is also undertaking the EAFRD project entitled "The Study and Sustainable Conservation of Varieties of Plants".
Previous Target 10: Management plans in place for at least 100 major alien species that threaten plants, plant communities and associated habitats and ecosystems **Updated Target 10:** Effective management plans in place to prevent new biological invasions and to manage important areas for plant diversity that are invaded.	😐	😐	The "Guidelines on Managing Non-Native Plant Invaders and restoring Native Plant communities in terrestrial settings in the Maltese Islands" put forward examples of management options for the following alien and invasive plants: *Acacia cyclops* *Vachellia karroo* (= *Acacia karroo*) *Acacia saligna* *Aeonium arboreum* *Agave americana* *Agave sisalana* *Ailanthus altissima* *Aptenia* spp. *Arundo donax* *Symphyotrichum squamatus (= Aster squamatus*) *Cardiospermum grandiflorum* *Carpobrotus edulis* *Casuarina equisetifolia* *Eucalyptus* spp. *Lantana camara* *Leucaena leucocephala* *Nicotiana glauca* *Nothoscordum borbonicum* *Opuntia ficus-indica* *Oxalis pes-caprae* *Pennisetum setaceum* *Pennisetum villosum* *Pittosporum tobira* *Ricinus communis* *Schinus terebinthifolius* *Tropaeolum majus* Site specific method statements are also drawn up to targeting problematic IAS such as in important valley watercourses ("widien" in Maltese) See also implementation progress of NBSAP Measures BI1 to BI4, and CB3.

Objectives and Targets of the GSPC	Status on Previous GSPC	Status on updated GSPC	Comments
Objective III: Plant diversity is used in a sustainable and equitable manner			
Previous Target 11: No species of wild flora endangered by international trade. **Updated Target 11:** Unchanged	☺	☺	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 EDPA, unless the person is in possession of a permit issued by MEPA. See also implementation progress of NBSAP Measures BR4
Previous Target 12: 30 per cent of plant-based products derived from sources that are sustainably managed **Updated Target 12:** All wild harvested plant-based products sourced sustainably.	😐	😐	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. 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. The issuance of policy guidance on the sustainable exploitation of wild plants is planned. See also implementation progress of NBSAP Measures BR3 and BR5.
Previous 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. **Updated Target 13:** Indigenous and local knowledge innovations and practices associated with plant resources maintained	😐	😐	Plants of medicinal and/or of aromatic value have been the subject matter of dissertations undertaken by students attending the University of Malta. The ethnobotanic survey by a local researcher as communicated in Malta's 4NR is still ongoing.

Objectives and Targets of the GSPC	Status on Previous GSPC	Status on updated GSPC	Comments
or increased, as appropriate, to support customary use, sustainable livelihoods, local food security and health care.			
Objective IV: Education and awareness about plant diversity, its role in sustainable livelihoods and importance to all life on earth is promoted			
Previous Target 14: The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness programmes. **Updated Target 14:** Unchanged	☺	☺	Such consideration is made when implementing CEPA in Malta. See also implementation of NBSAP Measure PA1 and PC1.
Objective V: The capacities and public engagement necessary to implement the Strategy have been developed			
Previous Target 15: The number of trained people working with appropriate facilities sufficient according to national needs, to achieve the targets of this Strategy. **Updated Target 15:** Unchanged	😐	😐	In-house training is provided to environment protection officers working on plant conservation. Resource mobilisation and further capacity building are recurrent needs. See also progress implementation of NBSAP Measures CB1 and CB2.
Previous Target 16: Networks for plant conservation activities established or strengthened at national, regional and international levels **Updated Target 16:** Institutions, networks and partnerships for plant conservation established or strengthened at national, regional and international levels to achieve the targets of this Strategy.	😐	😐	See progress implementation of NBSAP Measures PC3, PC4, RD1, IE1, and IE2. Existing formal networks are the Majjistral Nature and History Park Management Board, the National Plant Protection Board, and the Natural Heritage Advisory Committee.

Table 39 - Extent of Progress in Implementing the GSPC