

Inspire policy making by territorial evidence



GRETA - “GRGreen infrastructure: Enhancing biodiversity and ecosystem services for territorial development”

Applied Research

Malta

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ecosysTem services for territoriAl
development”

Table of contents

1	Introduction.....	4
2	(Geographic) description of the Maltese Islands.....	7
2.1	Case study outline.....	7
2.2	Territorial challenges.....	8
3	The green infrastructure network and its potentialities for territorial development in the Maltese Islands case study.....	9
3.1	What is the approach to green infrastructure and Ecosystem Services.....	9
3.2	Benefits of green infrastructure and ecosystem services for smart, sustainable and inclusive territorial development.....	10
4	Capacity of GI network in Malta to meet the demand of ES.....	13
5	Governance practices, policy and planning instruments to implement green infrastructure and enhance ecosystem services in Malta.....	13
6	Lessons learned and good practice examples from the Malta case study.....	14
7	Policy messages and recommendations in Malta.....	14
8	Annex.....	15
	References.....	15

List of Maps

Map 1. ESPON GRETA selected case studies	4
Map 2. Geographic location of Maltese Islands	7
Map 3 Malta area of GRETA case study. Overview map on potential GI serving multiple policies	11

List of Tables

Table 1 Potentialities for green infrastructure network in Malta.	11
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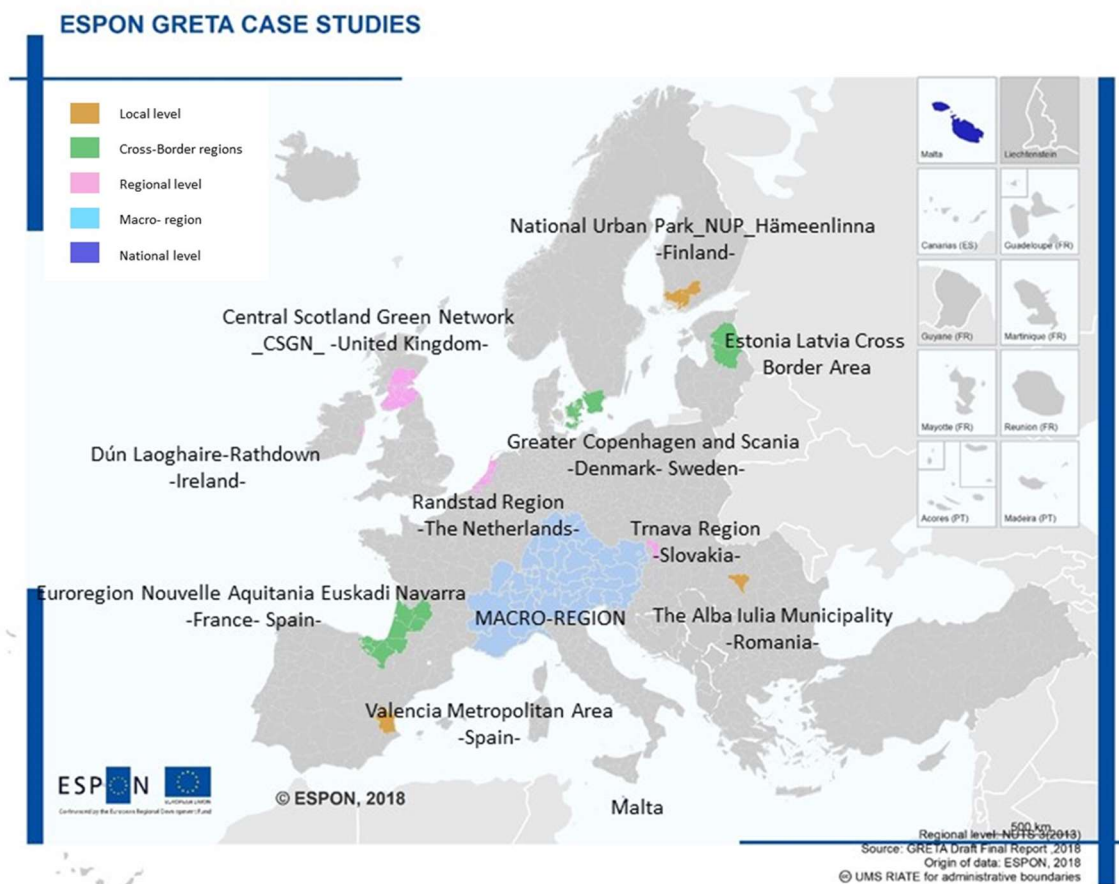
Abbreviations

EC	European Commission
ES	Ecosystem Services
ESPON	European Territorial Observatory Network
EU	European Union
GI	Green Infrastructure
LAU	Local Administrative Unit
NUTS	Nomenclature of Territorial Units for Statistics

1 Introduction

GRETA investigated 12 case studies that represented different spatial, institutional and governance settings and that ranged from urban centres to rural countryside. The case studies served to:

- i. gain knowledge on implementation factors, drivers and constraints in different planning systems and territorial realities;
- ii. gain insights on the use and applicability of economic methods in decision making; and
- iii. gather knowledge for policy and practice as input and inspiration for the policy recommendations.



Map 1. ESPON GRETA selected case studies

Method

The activities undertaken at the case study level incorporated a combination of desk-based analysis alongside online questionnaires and pre-structured interviews to key actors in each of the case study areas, including: (i) decision and policy making representatives; and (ii) those involved in designing, planning, implementing and managing green infrastructure (GI).

A series of three consultations were developed to gather relevant information from case studies on different aspects of GI spatial analysis, policies, planning and implementation. The consultation process was seen as a combined approach of an online survey and or a telephone interview (which used the survey questions as the basis) with stakeholders to facilitate getting good engagement and to address any clarifications needed.

Consultation A – Economic Valuation

The questionnaire included 20 questions structured in 2 main parts. The first part aimed at understanding the current use and awareness of valuation methods by respondents while the second part aimed at identifying their perceived barriers and interest of using such methods. We used a mix of open-ended and closed-ended questions to combine comparable results as well as qualitative material; respondents also had the possibility to comment on their responses. Analysis of Consultation A is described in Annex III-C.

Access to Consultation A
<https://survey.tecnalia.com/limesurvey/index.php/214247?lang=en>

Consultation B – Characterising green infrastructure and ecosystem services characterisation

The objective of this consultation was to identify good practice guidelines, opportunities and challenges that could be useful for a variety of regions and cities. Responses to Consultation B were used to assess the usefulness of the GRETA methodology, a methodology specifically developed to delineate and map the main green infrastructure (GI) elements and their multifunctionality, as well as identifying their capacity to support three main policy domains: Biodiversity, Climate Change and Disaster Risk Reduction, and Water Management. Questions in Consultation B were designed to help us gain further insight into the enabling factors that exist in different regions and cities. We also sought to gather information on the challenges and barriers that may compromise the implementation of GI. The final set of questions focused on identifying the general benefits and potential synergies and trade-offs associated with GI projects.

The maps produced for Consultation B in the GRETA project were intended to provide a starting point for discussion about the applicability of the GRETA methodology from European to local application. As such they did not aim to be a substitute for the maps or other planning material that already exist at local case study level nor were they aiming to characterize the GI on regional or local level. They were not developed to be used as an output from case study levels.

The landscape elements in the maps are produced based on standardized European data sets with a minimum mapping unit of 25ha (i.e. CORINE Land Cover 2012) – smaller geographical features are not depicted. The Consultation B aimed at finding the gaps between datasets produced at the European level and any other data sets produced at regional and local scales.

Access to Consultation B
<https://survey.tecnalia.com/limesurvey/index.php/614564?lang=en>

Consultation C - Analysis of governance, policy and financial frameworks

The successful implementation of green infrastructure (GI) projects requires a combination of governance structures, integrated policies and financial support. This consultation therefore aimed to investigate the governance systems in place in each case study area in order to determine how policies and policy makers enable the implementation of GI projects in the case study areas.

Responses to Consultation C aimed to help us identify: (i) how much funding (money and personnel) is currently used for GI in the case study regions; (ii) if this funding is sufficient for implementing and maintaining GI; and (iii) the main sources of funding (public tax-based funds, private investments, NGOs or others). Consultation C also examined whether policies compliment or conflict with GI and assesses policy makers' knowledge needs for making full use of GI development potential.

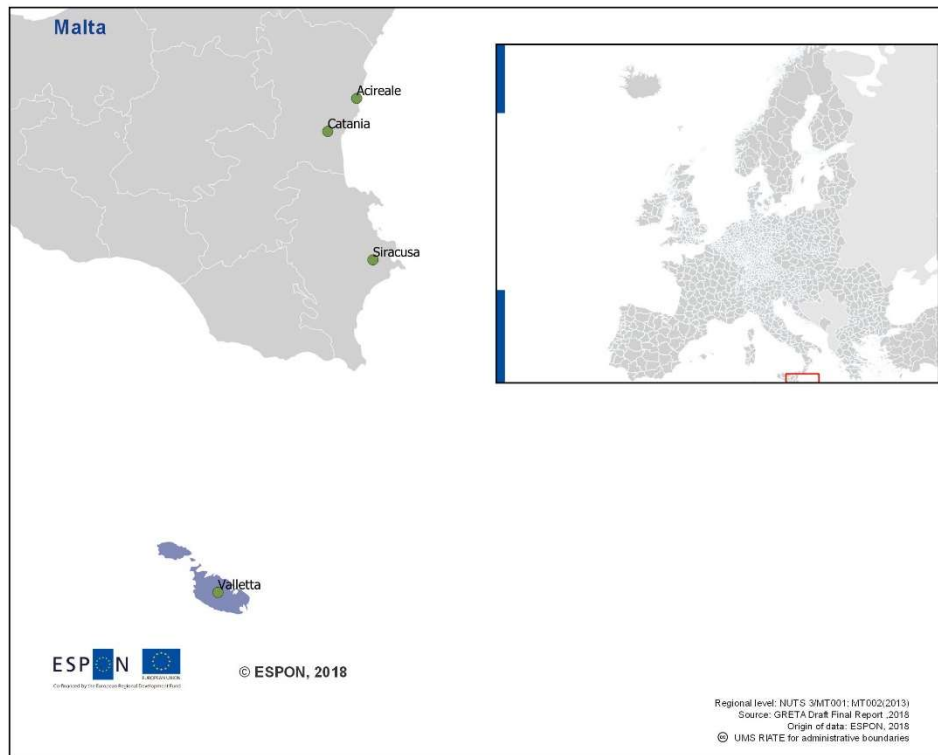
Access to Consultation C

<https://survey.tecnalia.com/limesurvey/index.php/129674?lang=en>

The content in this report is based on a mixed-method approach. The results presented are interpretations of semi-structured interviews, responses to a questionnaire on national policy and planning, responses to three consultations (Consultation A, B and C) via email, document analysis of plans and strategies (via desk-based analysis), and statistics and spatial analysis using GIS resulting from the GRETA project. For all case studies, telephone conversations (and for some cases face-to-face meetings i.e. Copenhagen and Scania, Alpine region, Euroregion Aquitania- Euskadi-Navarra) allowed the completion of the consultations B and C.

The respondents who have contributed to this case study are people working in the public administration in Malta.

2 (Geographic) description of the Maltese Islands



Map 2. Geographic location of Maltese Islands

2.1 Case study outline

Region/Area (French: Nomenclature des unités territoriales statistiques (NUTS) Classification of Territorial Units for Statistics).		MT NUTS 1-1 NUTS 2-1 NUTS 3 2 Malta (Mainland) MT001 Gozo and Comino MT002			
Geographical features Case study Area in km² Bioclimatic region		Island, semi-arid landscape with upland areas to the south. No permanent running rivers or water courses.			
Demographic figures		Socio-economic characteristics			
Total population in the case study area	434,403 By age group: By sex:	Unemployment by sex and age - annual average	Unemployment	Total country (reference year)	Case study
			All	% 3.8	% 3.8
			Males	% 0.4	% 0.3
			Females	% 0.1	% 0.1
			16-24	%	%
			urban	%	
rural	%				
	people/km ²				

Population density-average in the case study area	(reference year)	(GDP) total GDP income per capita 21000 euro's	
	1333 km⁻²	Other general information i.e. Self-perceived health by sex, age and degree of urbanisation	Age demographic profile - Comparable to the rest of the EU
	Mainland urban areas spread out from the North Eastern coastline. South Western half of island is mainly rural in nature. For Gozo, whilst the island is considered rural, the main urbanised areas are Victoria and Xaghra, surrounding land is semi-arid agricultural land.		
Other data sources to explore if needed	http://ec.europa.eu/environment/nature/ecosystems/pdf/Green%20Infrastructure/GI_MT.pdf Land use and spatial development planning: The Strategic Plan for the Environment and Development (https://issuu.com/planningauthority/docs/sped_approved_doc_1_). Water Management: Malta's 2nd Water Catchment Management Plan (https://era.org.mt/en/Documents/2nd_Water_Catchment_Management_Plan-Malta_Water_in_Maltese_Islands.pdf). Agriculture, Forestry and Fisheries: The Rural Policy and Design Guidance (https://www.pa.org.mt/en/supplementary-guidance-details/file.aspx?f=268). Finance: The Green Economy Action Plan (http://www.greengrowthknowledge.org/sites/default/files/downloads/policy-database/MALTA%29%20Greening%20Our%20Economy%20-%20Achieving%20a%20Sustainable%20Future.pdf).		

2.2 Territorial challenges

The Maltese Islands consists of three inhabited islands: mainland Malta, Gozo, and Comino. Malta and Gozo consist of distinct, densely built up urban areas with little existing green space, thus limiting the spatial opportunity for implementation of green infrastructure (GI). The lack of water resources leads to the area experiencing an underlying challenge to implement GI. Much of the remaining territory of the Maltese Islands are either intensively used or abandoned agricultural land. The islands are experiencing increases in population especially in urban areas, thus there are significant social and economic pressures to extend urban development zones. This trend poses a challenge to GI implementation.

In rural areas, particularly abandoned agricultural land provides an opportunity to develop GI. The primary use of the rural area is for agriculturally related land uses however informal recreation and GI are supported by the planning framework through the Strategic Plan for the Environment and Planning (SPED 2015) national strategic government document; SPED Policy

TO 1.7 supports increasing green open space, SPED Policy TO5 informal green recreation, SPED Policy TO 8.3 seeks to strengthen the links within the ecological network, and SPED Policy RO 2 for rural area informal recreation. The Maltese coast also offers another opportunity to develop GI, even though it is presently being used intensively, thus leading to conflicts between coastal users following a wide array of land uses from fishing related uses, recreation and also urbanised coastal areas. In effect the SPED 2015 divides the coastal zone between predominantly urban coast and predominantly rural coast (see SPED Policy CO1). Recreation in the coastal zone area is supported by SPED Policy CO3.

GI remains a relatively new term in the Maltese Islands and has largely been discussed and addressed at a conceptual level, therefore initiatives to date have been limited. Governance involving GI in is relatively weak as there is no specific GI policy or strategy in place or clear national policy mechanisms to implement GI. A recently published information document on Green Infrastructure (ERA 2018) advocates the use of GI and identifies core areas that could form part of a GI network in Malta, e.g. Natura 2000 sites and national parks. It also highlights funding for GI projects, which appear restricted to the EU Multiannual financing framework 2014 to 2020 and the Common Agricultural Policy Pillar 1 (greening payments) and Pillar II (rural development programme). Our analysis of GI in the Maltese Islands also suggests the term GI has not been used within the planning system although the SPED 2015 does support the potential elements of GI, such as protecting or enhancing national parks. The fragmented nature of landownership is also seen as a challenge in the holistic adoption and integration of GI networks across Malta.

3 The green infrastructure network and its potentialities for territorial development in the Maltese Islands case study

3.1 What is the approach to green infrastructure and Ecosystem Services

The concept of green infrastructure (GI) in Malta, both in its development within governance and implementation is in its infancy. From the data gathered in Malta, the reasons behind the lack of GI appear to be multiple. The 'environmental' agenda in Malta requires further integration with socio-economic development.

One contributing factor for the lack of GI development at any stage is due to the lack of a specific GI policy, strategy or plan. The National Biodiversity Strategy and Action plan does make explicit reference to GI and connectivity to address decline in biodiversity and the general concept of GI is referred to in various different policy documents, however, there appears to be no nationally specific policy instruments to deliver GI, other than the identified funding at EU level (see section 1.2).

The dense, compact characteristics of Malta's urban areas limit the potential for GI. However, one potentiality may be through the LifeMedGreenRoof demonstration project, which was developed by the University of Malta to demonstrate the potential multi-benefits of green roofs.

If appropriately incentivised, a green roof scheme implemented throughout Malta may potentially overcome the lack of conventional greenspace within the urban areas.

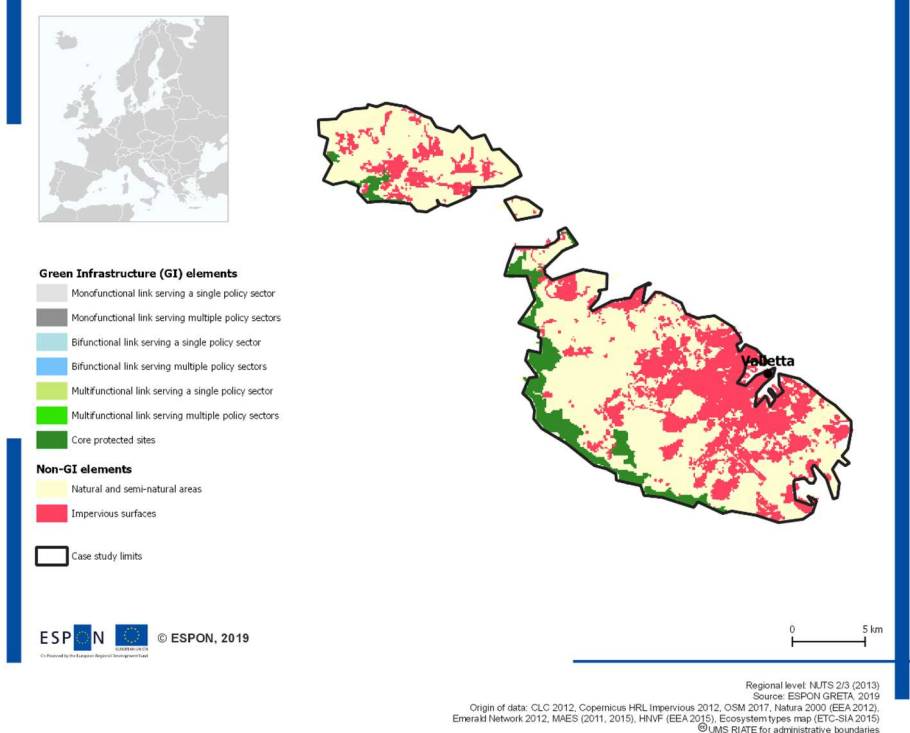
The coastal areas of Malta, particularly on the western side are presently the predominant locations with a protective designated status, such as Natura 2000. There are inland pockets that are also designated Natura 2000, however these are only small areas and associated with specific rare species of fauna such as bats. The remaining land varies between intensively used or abandoned agricultural land, which presently offers little in the way of contributing to a GI network, however which has the greatest potential for GI and ES development.

3.2 Benefits of green infrastructure and ecosystem services for smart, sustainable and inclusive territorial development

This section describes the potential green infrastructure (GI) network in Malta as delineated by the GRETA spatial analysis methodology. The analyses of synergies and trade-offs between the ecosystem services (ES) provided by the GI network and its potential for serving several policy objectives is also provided. This includes an analysis of Malta relative to EU patterns (Map 3, Table 1).

Current GI coverage in the Maltese Islands is quite limited with most of it already largely protected. Map 3 provides an illustration of the potential opportunities for development of GI in the Maltese Islands. Table 1 provides a summary of analysis on these potential for GI development. Given existing constraints, agricultural areas could provide additional support on implementing GI.

Overview map on potential GI serving multiple policies - Malta



Map 3 Malta area of GRETA case study. Overview map on potential GI serving multiple policies

Table 1 Potentialities for green infrastructure network in Malta.

Questions related to maps	Description of phenomena in the case study	Implication for management
Extent of GI	Potential green infrastructure (GI) covers about 10% of Malta, limited by the urban development and, to a lesser extent, agriculture.	Being an island poses a challenge to the integration of multiples uses in a limited space. Given these constraints, abandoned agricultural areas could further support GI.
Integration of protected areas	Most of the GI is covered by protected areas. On the other hand, all protected areas are integrated in the GI and all of them are connected.	The GI being designated as a protected area, ensures its stability.
Support to policies related to: Biodiversity, Climate Change and	Information not available due to missing data on Ecosystem Services	

Disaster Risk Reduction, and Water Management		
Synergies and trade-offs	Information not available due to missing data on Ecosystem Services	
City level	About 30% of Valletta is covered by green urban areas, which positions this city within the lowest range in Europe. This is compensated by larger coverage of GI in peri-urban areas. Green urban areas slightly decreased between 2006 and 2012.	There is a need to consolidate green urban areas to avoid further decrease and improve connectivity with peri-urban areas.

4 Capacity of GI network in Malta to meet the demand of ES

Our outreach suggests there is a lack of awareness and public engagement to gain broader buy-in for green infrastructure (GI) efforts; one respondent commented that there was 'a lack of political commitment'. Although GI appears to be a potential mechanism to help deliver objectives within biodiversity and ecosystem restoration policies and strategies, there is limited evidence of implementation. Even though the strategic development of GI in Malta is limited, as demonstrated through the LifeMedGreenRoof project, there is potential to grow demand for this type of technology to deliver a GI network providing multiple ecosystem services (ES) within urban areas.

5 Governance practices, policy and planning instruments to implement green infrastructure and enhance ecosystem services in Malta

Formal governance on green infrastructure (GI) in Malta appears to be limited with no specific GI strategy or policy instruments in place to support the implementation of GI. The national action plan on financing a 'green economy' (Finance: The Green Economy Action Plan, (2014) included proposals to identify areas of land by 2017 that could potentially form components of GI, as well as mechanisms to finance 'green' initiatives in Malta. To some degree, the areas of suitable land were identified within the most recent publication on GI in Malta, an 'Information Document' (ERA 2018), which advocates the implementation of GI to meet a variety of social, economic and environmental policy objectives. There are other national policies, e.g. National Biodiversity Strategy and Action Plan (2012-2020) or the Strategic Plan for Environment and Development (2015) that implicitly support GI through the protection and enhancement of elements that might would make up GI e.g. national parks and greenspaces. These documents do not explicitly refer to GI nor make reference as to how to implement GI through specific policy instruments.

Whilst acknowledging that the integration of Green Infrastructure (GI) is in its infancy in Malta, appropriate planning and implementation of GI would ensure a holistic framework for resource planning and conservation that provides multiple ecological, social, health and economic benefits. Furthermore, GI can potentially minimise biodiversity loss by enhancing the ecological coherence of Natura 2000 and restraining habitat fragmentation. The purpose of the document issued in September 2018 - 'Investing in the Multi-functionality of Green Infrastructure (GI) – An Information Document to support GI Thinking in Malta' (https://era.org.mt/en/Documents/GI_InformationDocument-Consultation-ERA-18.pdf) – is to provide a concise and informative account of the concept of GI. It is intended to help promote and motivate additional initiatives at various levels to integrate the consideration of GI and thereby help reap multiple benefits, whilst maintaining initiatives in line with relevant and applicable national environmental and spatial planning laws.

One successful project that has been followed in terms of implementing GI in Malta is the LifeMedGreenRoof pilot project. This involved the installation of green roofs within the University of Malta premises to test their feasibility and develop technology and expertise in their implementation under the climatic constraints of a hot, dry region. It appears that for this type of project to be implemented more widely in Malta this would require governance mechanisms to develop the technology further, enable planning and introduce financial support for the projects.

However, the economic and social pressures to provide for a growing population, as well as a growing economy could see GI development in these areas side-lined in favour of the necessary infrastructure development.

6 Lessons learned and good practice examples from the Malta case study

The LifeMedGreenRoof project was a pilot study to demonstrate potential multi benefits of Green roofs in dense built up urban areas with little existing green space. The scope of the Pilot Project was restricted to the University premises. The project offered insight and lessons learnt to implementing green roofs within hot, dry and densely populated urban areas.

7 Policy messages and recommendations in Malta

There is an opportunity to develop a green infrastructure (GI) strategy in Malta with implementation potentially playing a significant role in overcoming challenges related to a rising population and growing economic development as well as meeting national and international commitments on biodiversity and climate change. Opportunity exists to develop GI policy which considers the development of abandoned agricultural land to both enhance ecosystem services as well as provide development opportunities. GI offers the opportunity to meet both needs but will require further complementarity between various policies and plans, e.g. the Strategic Plan for Environmental and Development (SPED) and the National Biodiversity Strategy and Action Plan (2012-2020). This approach could serve as a basis for new policy directions post 2020 (when existing policies expire).

8 Annex

Details for stakeholders who contributed to preliminary outreach and consultations in relation to Malta case study.

Type of stakeholder	Workplace	Type of interaction	Date
Technical expert	Academic	Emails, Phone interview	07/03/2018 12/03/2018 23/03/2018
Technical expert	Academic	Emails, Online questionnaire	15/03/2018 01/08/2018
Technical expert	Regional level public authority	Online questionnaire, Emails	30/07/2018 26/12/2018
Technical expert and Policy maker	National Government	Email consultation	23/01/2019

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Sped 2015 Strategic Plan for Environment and Development 2015)
<http://extwprlegs1.fao.org/docs/pdf/mlt158315.pdf>

ERA 2018 'Investing in the Multi-functionality of Green Infrastructure – An Information Document to support GI thinking in Malta. https://era.org.mt/en/Documents/GI_InformationDocument-Consultation-ERA-18.pdf

Malta's National Biodiversity strategy and action plan 2012 – 2020.
<https://www.cbd.int/doc/world/mt/mt-nbsap-01-en.pdf>Greening our Economy – Achieving a Sustainable Future (2014). Ministry for Sustainable Development, the Environment and Climate Change. Malta.
https://meae.gov.mt/en/public_consultations/msdec/documents/green%20economy/consultation%20document%20-%20green%20economy.pdf