

OCEANA © LIFE BaHAR for N2K



har for Natura 2000

LIFE12 NAT/MT00845 **AFTER-LIFE CONSERVATION PLAN**

For the protection of caves and reefs from shallow to deep

> Faculty of Science Department of Biology



The LIFE BaĦAR for N2K (LIFE12 NAT/MT/000845) Project is 50% co-financed by the EU LIFE+ Funding Programme



II-progett LIFE BaĦAR for N2K (LIFE12 NAT/MT/000845) huwa kofinanzjat (50%) mill-fond LIFE+ tal-Unjoni Ewropea.







Abbreviations



What is an After LIFE Conservation Plan?

The After-LIFE Conservation Plan presents a conservation strategy following the end of a LIFE+ project, which shall ensure that the efforts of the project are effective and continue, as applicable, even after project completion. The After-LIFE Conservation Plan will include activities that are planned in order to protect the identified sites for the protection of habitats/species and how the longer-term management of project sites will be assured. It will also detail what steps will be taken by the competent authority and by relevant stakeholders.



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INTRODUCTION

The 'Life+ Benthic Habitat Research for marine Natura 2000 site designation' (LIFE BaĦAR for N2K) project, is an EU LIFE+ research programme that explored benthic habitats in Maltese waters. The goal of the project was to support the designation of marine Natura 2000 (N2K) sites in Malta's Fisheries Management Zone (FMZ). It targeted the seabed habitats reefs, sea caves and sandbanks.

Focusing on scientifically identified target areas, LIFE Ba#AR for N2K surveyed waters around Malta at depths ranging from 0 m to 1192 m. Due to the logistical challenges of surveying in the marine environment, there had been limited data available for these areas prior to the work of the LIFE Ba#AR for N2K project. To address these knowledge gaps, the project conducted two at-sea expeditions in 2015 and 2016, covering both shallow and deep-water benthic habitats. Through these expeditions, spanning more than 100 days at sea, the research team conducted 206 Remotely Operated Vehicle (ROV) transects, 42 scientific SCUBA dive surveys, took 50 sediment samples and surveyed approximately 130,000 ha of seabed using Multibeam Echosounder (MBES). This state-of-the-art research approach provided a wealth of information on the presence and location of important reef and cave habitats at previously unexplored locations. In total, 89 caves were surveyed and multiple deep-water reef areas were identified, including coral frameworks and a fossilised sponge reef. These new datasets were combined with relevant existing datasets, to facilitate the holistic and scientific identification of novel sites for N2K designation for reef and cave habitats. Annex I reef, sea cave, and sandbank habitats, at any depth that they might occur, provide vital ecosystem services for the Maltese islands. Most tangibly, reefs and caves are essential habitats for supporting commercial fish stocks and high levels of biodiversity which, in turn, are essential for Malta's socioeconomic fishing sectors. Beyond fisheries, this rich biodiversity is an important part of Malta's natural heritage. Biodiversity offers us sources of inspiration, cultural identity and possibly as of yet undiscovered biological resources for opportunities and use in blue growth initiatives. However, LIFE Ba#AR for N2K also collected data on the threats and pressures facing these benthic habitats. Through high-resolution ROV footage, LIFE Ba#AR for N2K was able to provide unique and novel insights into the conditions of Malta's deep-water offshore environments, helping us better understand the anthropogenic stressors that they face. This information is very instructive, and highlights the need for Malta to protect its natural heritage.

Through the successful actions of the LIFE Ba#AR for N2K project, three existing offshore N2K Sites of Community Importance (SCIs) Marine Protected Areas (MPAs), designated for turtles and cetaceans through LIFE Migrate Project (LIFE11 NAT/MT/1070), and three inshore N2K SCI MPAs (designated for Annex I habitats) were extended, adding 39,276 ha to Malta's N2K MPA network. Additionally, two novel N2K SCI MPAs were designated, adding a further 30,848 ha to Malta's N2K MPA network. The LIFE Ba#AR for N2K project has therefore designated an additional 70,124 ha of MPAs in Malta's FMZ.

With the features identified and the SCIs designated (through the extension of existing, or creation of new sites), the next step for safeguarding these marine habitats for sustainable use is the creation of the N2K site Conservation Measures. For the LIFE Ba#AR for N2K project sites, this process has been fast-tracked via integration alongside the development of Conservation Measures for the previously existing N2K MPAs (both SCIs and SPAs). The resulting target is for all of Malta's N2K MPAs to have Conservation Measures in place by 31st December 2019. This means that sites identified through LIFE Ba#AR for N2K will be covered by Conservation Measures well ahead of the 6-year timeframe as laid out in the EU's Habitats Directive (Council Directive 92/43/EEC).

HISTORY OF THE PROJECT



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At the start of the project in 2013 there were five marine protected areas (MPAs) in Malta, covering ca. 190 km². These MPAs, which are part of the Natura 2000 network, were mainly based on the presence of *Posidonia* beds (*Posidonia oceanica*) and the endemic Maltese top-shell, *Gibbula nivosa*.

There are of course other marine habitats and species present in Maltese waters that merit protection. However, scientific information on which areas are important for these other habitats and species was very limited, and insufficient for identifying and designating appropriate Natura 2000 (N2K) sites.

The LIFE BaĦAR for N2K project was developed to address this knowledge gap for three important marine seabed habitats: reefs, sea caves and sandbanks.

Information on the location and state of these habitats in Maltese waters was patchy for areas close to the coast, and generally scarce for areas far from shore. This was mainly due to the high costs and specialised skills that are needed to explore marine habitats, especially in deep waters.

The main purpose of the project was therefore to fill existing data gaps and identify areas within Maltese waters supporting the three marine habitats mentioned above. The area of study was the Maltese FMZ, which extends up to 25 nautical miles from the Maltese Islands coastline.

The project also aimed to increase public awareness and inform, as well as involve, stakeholders in the process leading to the identification of the new MPAs.

Overall, the project had the following aims:

- 1. Identify and fill knowledge gaps on the presence of reefs, sea caves and sandbanks in Maltese waters
- 2. Establish new areas for protection of these habitats and establish site conservation objectives
- 3. Involve and inform stakeholders throughout the project
- 4. Increase awareness on marine habitats and the N2K network

Several actions were developed to address these aims and lead to the desired outcomes of the project. A-Actions focused on the scientific part of the project and were based around the gathering and use of data and ultimately identification and designation of new MPAs. The focus of E-Actions was to involve stakeholders and increase awareness among the public on marine habitats and related environmental topics. Meanwhile, F-Actions were established to monitor progress and guarantee the timely and correct implementation of all project actions.



PROJECT ACTIONS: ACHIEVEMENTS - CHALLENGES - IMPACT

An overview of the core achievements, challenges and impact of each of the project actions is provided in the table below.

Action	Main Achievements	Challenges	Impact / Prospect
A1 – Desktop Data Collection	Identification of existing knowledge gaps on habitats pre-project to guide project surveys	To make various data sets from different sources INSPIRE compliant took longer than originally foreseen and required external expertise	Provided essential information of <i>status quo</i> of knowledge pre-project
	Compilation of existing data	Existing habitats data was mapped in different projections, and utilised different descriptions, which had to be coded as per EUNIS classification for comparative purposes	Made existing information INSPIRE compliant for future use
	Mapping of fishing pressures using available data	Data from secondary sources (such as publications) often did not contain coordinates to enable mapping	
A2 – Data Analysis & Interpretation	- Data Analysis Detailed analysis of all There were various data g		The results of the first and second analysis guided various surveys. Overall results, through
	Sharing knowledge in the form of scientific publications and conference contributions	manner. Preliminary data analysis required for subsequent interpretation took longer than foreseen/expected due to the extensive amount of data collected through the surveys	action A3, identified priority areas for conservation and overall conservation status.
A3 – Marine Habitat Surveys	Two successfully completed marine habitat surveys through SCUBA diving and ROV deployment	npleted marine habitat veys through SCUBA depth of 1000m; deep-sea ing and ROV caves were inaccessible to	
		ROV. Preliminary data analysis took longer than expected due to the large amount of data collected.	Valuable data was collected on marine flora and fauna, bathymetry and seabed composition, which was used to identify priority areas.

Table 1) Actions of the projects and their main achievements, challenges and impacts and/or future prospects



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	One end		Evenueles of the
	One seabed survey (multibeam echosounder & sediment sampling) conducted for previously unexplored areas New and extensive data collected on litter and protected/vulnerable species distribution Publication of an online	Procurement and logistical issues resulted in delay of the MBES survey, which could not be carried out as foreseen to guide the second marine survey	 Examples of key survey findings: New depth record for red coral Record of new species for the Mediterranean - starfish <i>Coronaster briareus</i> Deep water caves at depths of down to 795 m The raw data collected can be
	data viewer displaying the impressive project findings and results	No major challenge	further analysed in detail for future studies and projects, while the analysed data can be used for future projects/studies as well as to inform various national management and assessment processes
A4 - GIS Development and Implementation	Creation of maps showing priority areas identified, including habitat and species distribution	Selection/harmonisation of data from different sources to create user-friendly maps	The maps (GIS layers) produced and the database created will support ERA in its future work on the management of MPAs as well as other work by ERA and DFA relating to the management of the marine environment
	Compilation of pre and post project data into one geodatabase and GIS map package(s)	Making final data INSPIRE compliant required specific external expertise/training	The data can serve as a foundation for future studies
A5 - Identification of proposed Sites of Community Importance	Various coastal and offshore sites were identified for protection of priority habitats under the Natura 2000 framework	Administrative work for compilation of maps and filling of SDFs took slightly longer than expected	Extensive sites identified that require protection and are subject to various pressures and threats
A6 - Designation process for proposed Sites of Community Importance	Three inshore and five offshore sites were designated for the protection of cave and reef habitats and proposed for inclusion in the N2K network	The challenge of designation will come into effect with the future management of these sites	The new sites increased the protected marine areas from 3,487 km ² in 2016 to 4,138 km ² in 2018 Legal designation for new sites protecting sea cave and reef habitats is the first step
	The three inshore areas are extensions of existing coastal MPAs. Two of the offshore areas are new sites, while the other three are extensions of SCI MPAs previously declared in 2016		to ensure that future management can be implemented
A7 - Identification of conservation objectives for	Seven conservation objectives have been identified and published in	The challenge was to have an approach that was consistent	These will be aligned with the process on existing marine sites, for which Conservation
4/-	CONTRACT STATES	A Caller of a	a the the

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each of the	a dedicated document on	and coherent with objectives	Measures shall be in place by
designated site	the project website	for the existing sites	end of 2019
A8 - Identification	Collected views and	Ensuring stakeholders	The information collected
of diversification	perspectives of	understand the process of	will guide future
of tasks for	stakeholders, and	designation and	consultations and will be
stakeholders	identified potential	developing/implementing	considered for management
being impacted by	impacts/conflicts for	management measures, and	measures for the LIFE Ba#AR
the designated	future management of the	the time required for such	sites as well as previously
sites	sites	the time required for such	designated MPAs
51(25	Identified best practices	Finding a way to cooperate in	
	and potential alternative	terms of providing valuable	
	livelihoods for key	input on new sites, rather than	
	economic stakeholders	-	
F1 Droiget		discussing existing sites	
E1 - Project	Project launched on 28 th of	April, 2014	
Launch	Deschart surge 2000	the second set of the second s	The information metericl
E2 - Awareness-	Reached over 3000	It was challenging to regularly	The information material
Raising Campaign	people through Facebook	update the Facebook site with	produced will be used to
	with project updates and	new interesting facts and	inform the public during
	relevant information on	information and to attract new	future events and utilised in
	marine environmental	followers. This involved more	stakeholder consultations on
	issues and discoveries	work than expected; it is also a	the MPAs (info-clips of 2018)
		challenge to keep people	as well as for other initiatives
		interested over the longer	(e.g. the MSFD PoMs
		term when activities are not	(pressure info-clips)
		taking place	
	Produced several well-	Timely implementation and	The information clips will be
	received stationery items	production required technical	used to further public
	and awareness materials	input to ensure scientific	education and support future
	(promo clip, info-slots)	accuracy as well as overview,	awareness events
		checking and supportive work	
		by project management team	Selected footage and photos
			from the surveys can be
			made available for
			publications and public
			awareness initiatives
	Reached out to local	The new General Data	Created interest in the
	stakeholders through	Protection Regulation (GDPR),	project and outreach to
	email shots	reduced email list as people	several people
		had to actively consent to be	
		kept on record	The ERA mailing list will
		Rept of record	remain in place to inform
			people on future initiatives
	Several press releases	No major challenge	The press releases draw
	issued, which received	No major chancinge	attention to the project,
	international attention		especially the project results
	and TV interviews given		copecially the project results
E3 - Information	Hosted two well-attended	Ensuring timely	The exhibition prints and
activities for	exhibitions in 2015 and		remaining leaflets will be
			-
general public	2016 showcasing photos	guidance, supervision,	utilised for future awareness
	submitted by the public	double-checking and input	events
	through a public	from project management, as	
	contest/voluntarily	well as various reviews	
	Created, printed and	following partner feedback to	
	disseminated 4	ensure scientific accuracy	
	information leaflets about		
	the project, marine		
			0



E4 - Information and knowledge transfer activities	habitats, project results and the newly designated sites Produced another set of exhibition prints showcasing the project findings, which were shown at the Esplora Science Centre in June 2018 and viewed by several hundred people Produced notebook calendar showcasing the marine environment and disseminated about 5000 copies to the public	No major challenge The challenge of stakeholder involvement is to create an environment in which they	Notebooks and calendars were effective and popular dissemination tools and were used to raise awareness at multiple events and meetings The photos used were selected through a photography competition, which helped further engaged stakeholders and raised awareness The input from stakeholders on the existing marine protected areas, the
for specific stakeholders	future processes on several occasions Planned, organised and hosted a successful 3-day conference on marine protected areas in the Mediterranean, attended by approximately 100 people, including 10 foreign, international ovports	feel integrated, open to discussions and keen to listen The conference did establish that and smaller stakeholder meetings, including the breakout sessions at the conference, provided the chance for more detailed discussions	discoveries of the project and future management needs will be taking into consideration in the drafting of Conservation Measures for the new and previously designated MPAs The relationship formed and contacts made with stakeholders over the course of the meetings and conference can be built on for current and future consultations
E5 - Project Website E6 - Notice Boards	experts Set-up and regular updates of the project website, which over the lifetime of the project attracted views from over 200,000 people from all over the world Three sets of notice boards were created and	Keeping the site attractive and updated at all times Bringing the project results, in particular the online viewer, to a wider audience Putting all relevant information into a compact	The project website will serve as an information platform for the next 5 years, and will allow people to have an insight in project outputs and download relevant information material The six noticeboards which were updated in 2018 will
	installed	and attractive display format, also in view of the MPAs that were designated in the recent years through other projects	remain <i>in-situ</i> to inform locals and foreigners about Malta's MPA network



E7 - Layman's	A well-received,	Compiling all information in a	The Layman's report is
Report	informative and attractive Layman's report was created	visually attractive, simple and compact format	downloadable from the website and hard copies have been disseminated at past events and will be disseminated at future events to inform people about the project and Malta's marine environment
			The Layman's report was commended for its high quality in terms of content and production
E8 - Closing off		ion celebrated at the Closing eve	
event		olders, the project team and the N	
F1 - Project Management	Facilitated, monitored and ensured successful implementation and completion of the project	Ensuring timely and correct project implementation, in view of the complexity and number of actions/deliverables	The project management guaranteed the success of the project
		Maintaining continuity through various personnel and administrative changes over the course of the project	
F2 - Project Monitoring	Five monitoring visits were held Monthly updates sent to EU monitor Project finances were checked and kept updated	No major challenge	Project documentation will be kept for 5 years following project completion
F3 - Networking with other projects	Several meetings with ongoing LIFE+ projects were held and events attended, which facilitated the exchange of information among projects	Allocating time for travel abroad during critical phases of the project	The exchange of information with other ongoing projects (LIFE Migrate and LIFE+ Malta Seabird) and other entities and experts, which contributed to the overall success and will guide future management This will also include future data exchange to ensure
F4 - Independent Financial Audit	Audit on the project completed	Ensuring accuracy noting complexity of project funds and proposed shifts and budget changes	maximum use of the data The project audit will show correct implementation of the project and proper use of received funding
F5 - After Life Conservation Plan	Completed comprehensive and well- thought-through After- LIFE Conservation Plan	To streamline the After-LIFE conservation plan with the process for developing Conservation Measures for previously designated MPAs	The After-LIFE Conservation Plan will guide actions until Conservation Measures are in place



SITUATION ANALYSIS



The designation of N2K sites is the first step in the protection and management process for the reef and sea cave habitats identified through the LIFE BaĦAR for N2K project. The Conservation Objectives and After-LIFE Conservation Plan will define targets and a strategy to be followed by ERA relevant stakeholders and following project completion. This After-LIFE Conservation Plan identifies measures to be

taken in the interim to preserve

the habitats until site-specific Conservation Measures are established.

Additional to the previously mentioned areas for the conservation of *Posidonia* beds and *Gibbula nivosa* (now *Steromphala nivosa*), the LIFE+ MIGRATE and LIFE+ Malta Seabird projects resulted in the designation of nine additional N2K sites in 2016, which are important for the loggerhead turtle, the bottlenose dolphin and three seabirds that breed in the Maltese Islands. The information collected through the LIFE BaĦAR for N2K project led to a further three inshore and five offshore areas being proposed for the protection of sea cave and reef habitats and their inclusion in the N2K network. The three inshore areas are extensions to existing coastal MPAs. Two of the offshore areas are new sites, while the other three are extensions to MPAs declared in 2016.

As of June 2018, Malta is protecting over 4100 km² of its waters, equivalent to more than 35% of its Fisheries Management Zone, for the conservation of important marine habitats and species. Conservation Measures will be established for protected marine sites, with measures drafted utilising the information gathered through the project and in consultation with stakeholders.



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SWOT Analysis

SWOT is an acronym for Strengths, Weaknesses, Opportunities and Threats.

A SWOT analysis is a tool used to identify internal strengths and weaknesses, as well as external opportunities and threats, which can aid or hinder attaining the objectives of the project.

The aim is to identify:

- Strengths those attributes of the project, the project team, and the site(s) that have aided or can aid in achieving the project's objectives.
- Weaknesses those attributes of the project, the project team and the site(s) that have harmed or can harm the projects potential to achieve its objectives.
- Opportunities external conditions that might be helpful in achieving the project's objectives.
- Threats external conditions that might be harmful to achieving the project's objectives.

	SWOT MATRIX						
	INTERNAL FACTORS						
	STRENGTHS (+)	Importance		WEAKNESSES (–)	Importance		
1	Timely overlap with implementation of Conservation Measures for previously designated sites will speed up their implementation for new sites, as this will be undertaken as one coherent process.	MEDIUM	1	Capacity is limited in regard to regulating marine sites, also noting the extent and location of the offshore sites.	MEDIUM		
2	Actions A8 and E4 outcomes provided valuable stakeholder feedback, which will be considered when developing the Conservation Measures.	HIGH					
3	Participation by various stakeholders in knowledge transfer actions, as well as the various deliverables, has opened a dialogue among the various stakeholders and raised awareness, which can be built upon for conservation actions.	HIGH	2	The establishment and implementation of Conservation Measures within MPAs would typically involve a number of sectors. Consequently, this necessitates an effective and collaborative working relationship between relevant authorities for the timely and efficient implementation of Conservation Measures.	MEDIUM		

Table 2) SWOT Analysis for the LIFE BaĦAR for N2K project.



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6	Skilled and knowledgeable Team, who are familiar with the project data following participation in the various actions, in particular action involving data analysis and mapping for site designation.	HIGH		Administrative procedures (such as those linked to procurement processes) can be lengthy. For example, unforeseen circumstances may arise and delay a tendering	
7	The project data gave insights on existing threats to marine habitats and species. This data will help to guide Conservation Measures.	HIGH	3	process, as was the case for the MBES survey and the action A8 tender. Such factors must be taken into consideration in order to provide effective protection through interim- measures, until Conservation Measures are in place.	MEDIUM
		EXTERNAL	FAC	TORS	
	OPPORTUNITIES (+)	Importance		THREATS (–)	Importance
1	Interest of several stakeholder groups in conservation support is high as shown through actions E4 and A8.	MEDIUM	1	Regulation of activities within the 12 nm mile zone falls within the remit of several authorities, thus requiring good communication and knowledge transfer to ensure effective responses to infringements.	MEDIUM
2	General public and tourism industry benefit from well- managed marine protected areas and healthy ecosystems, which can foster support for management.	MEDIUM	2	Marine litter (which was the main threat observed during the surveys) resulting from diffuse sources (currents, tourism, fishing, etc.) are difficult to control.	MEDIUM
3	Collaboration with other institutions for the evaluation of all data will foster exchange of information and produce valuable outputs.	MEDIUM	3	Action A8 identified conflicts between different stakeholders, as users of the sites, might hinder cooperation for effective management.	MEDIUM
4	Data collected will continue to provide valuable insights through continued analysis.	MEDIUM	4	Action A8 revealed that stakeholders perceive spearfishing operations to be inadequately enforced and that recreational fisheries are a threat noting these remain unregulated.	MEDIUM
5	Ongoing research initiatives, in which ERA is involved, targeting Mediterranean MPAs, habitats and species, will continue to provide valuable data input.	HIGH	5	To establish regular monitoring especially for deep-sea areas may be a major challenge and very expensive.	HIGH



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6	The legal designation enables Malta to set Conservation Measures for habitat and species protection.	HIGH	6	Capacity of relevant authorities will need to be enhanced to cover expansions in their remit with regards to regulating marine sites. Stakeholder perception from action A8 is that more enforcement is required. The areas designated as protected sites cover a large area of more than 35% of the 25nm FMZ, which will make regulation and enforcement a	HIGH
7	Establishing strong collaboration with other authorities and relevant stakeholders on the future management of these sites can aid conservation.	HIGH	8	challenge. Selected practices linked with fisheries and tourism activities may threaten habitat conservation statuses.	HIGH



AFTER-LIFE OBJECTIVES AND METHODOLOGY

The SWOT analysis shows that intermediate actions concerning habitat conservation are required until Conservation Measures are in place and implemented. The Conservation Objectives (as listed in Table 4) are taking into account the pressures and threats identified through the Life Ba#AR for N2K project and the current challenges, capacity needs and priorities as indicated below:

Table 3) Situational Analysis of the Maltese Context.				
Conservation Priorities	Institutional Issues			
 Addressing the impact and threat of pollution from land-based and marine sources. Reduce habitat degradation through human activities. Understanding cave biodiversity and identifying especially sensitive and diverse caves for better conservation. Educating the public and stakeholders on their potential impacts, and how they can contribute to conservation. 	 Improvements to collaboration between authorities would be beneficial. This is especially the case for recreational fishing regulation and the issue of ALDFG. Further discussions would enhance cooperation, and would facilitate litter/waste management, noting observations of litter through the project and the fragmented governance of regulations for activities causing pollution. 			
Capacity Needs	Political Challenges			
 Additional capacity required to identify conservation needs, implement measures and monitor their effectiveness and the status of the habitats. Monitoring will be a challenge considering the size and, in some cases the location, of the areas designated. 	 General support for tackling marine pollution is present at higher political levels. Tourism is an important component of the Maltese economy, but is also linked to generating high anthropogenic impacts on coastal areas. 			

The development of said objectives focused on four different aspects, which are to:

- maximise the use of collected data in view of N2K MPA site management requirements and information on pressures and threats observed;
- streamline intermediate measures with existing and/or ongoing initiatives and support the use of relevant information from other projects for the management of marine sites;
- reduce and where possible eliminate identified pressures and threats, and to
- continue to increase awareness about marine habitats and species.



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Conservation Objectives

Seven Conservation Objectives have been identified for the LIFE Ba#AR sites, in line with the Conservation Objectives for all marine sites, and published online¹ as part of the project deliverables:

- 1. To provide the conditions that would allow the area of Posidonia beds / reefs / caves / sandbanks to increase and its structure and function to be improved or maintained (as appropriate to the features present within each site).
- 2. To maintain healthy populations of the Red Data Book species present in the site.
- 3. To ensure a synergistic management with other relevant MPAs.
- 4. To raise public awareness and appreciation of the habitats and species among specific target groups and the general public.
- 5. To ensure that anthropogenic activities occurring in the area are carried out in a manner that do not jeopardise the site's conservation objectives.
- 6. To address any illegal activities occurring in the site in the long term.
- 7. To ensure that there is the right setup where different stakeholders can exchange and share their views.

These Conservation Objectives guided the development of the After-LIFE Management Measures (MMs). It should be noted that Conservation Objectives 6 and 7 are not specifically listed in Table 4 below, as they were incorporated into CO3 for the After-LIFE MMs, as interim measures, and will be integrated into the Conservation Measures as part of the future management set-up for the sites. These Conservation Measures are currently being developed for all marine sites.

Degree of Importance:

Critical – First Priority - Implementation of these Management Measures (MMs) is vitally important to fulfilling objectives/obligations as defined by national/EU policy/legislation, and/or ensuring appropriate environmental management

Necessary – Second Priority – Implementation of these MMs is mandated through national/EU policy/legislation

Advantageous – Third Priority – These MMs will help improve conditions and factors relating to Malta's marine environment, but are not mandatory through national/EU policy/legislation and are not essential to long-term conservation goals

Estimated Costs:

High – € 50,000.00 and above *Medium* – € 20,000.00 to € 50,000.00 *Low* – Up to € 20,000.00

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¹ <u>https://lifebahar.org.mt/wp-content/uploads/2018/06/Conservation-Objectives_Habitats-MPAs.pdf</u>

Conservation Objective (CO)	Management Measure (MM)	Measure Descriptors	Descriptor(s)	Measure Logistics
CO1: To provide the conditions that would allow the area of	MM1: Investigate and explore options for a system to enable and facilitate the data collection of bycatch of biogenic reef	Type of Measure	Participating entities will draw upon internal and external expertise to review the existing situation with regards to incoming data streams linked to non-target biogenic reef	Lead/ Participating Beneficiaries
Posidonia meadows / reefs / caves / sandbanks to increase and its structure and	forming species (such as the red coral, <i>Corallium rubrum</i>). This MM emanates in response to the project findings regarding the presence of biogenic reef forming	Study/ Assessment	forming species being caught/brought up during fishing activities. Based on the results of this review, gaps in the current situation will be considered alongside existing and likely future obligations in order to devise optimal	ERA/ DFA; MESDC
function to be improved or	species in Malta's FMZ. Eventual recommendations should be respective of	Degree of Importance	solutions. Recommended solutions should meet requirements and be practically feasible. In addition,	Possible Funding Sources
maintained (<i>as</i> <i>appropriate to the</i>	(and if possible, synergise with) existing and/or upcoming relevant obligations from	Necessary Indicators	stakeholders will be consulted for their input regarding the current state-of-play and for their recommendations/	National, EMFF Estimated Cost
features present within each site).	international legal instruments.	Publication of a report on the feasibilities, operational details and possible implementation of systems	assessment of suggested possible solutions. This MM/exercise will be purely desk based, creating a	Low
& CO2: To maintain healthy populations of		for collecting data of biogenic reef forming species as bycatch.	report for consideration by relevant authorities. Use of the report will be at the discretion of these authorities. For example, the report may be useful in light of on-going discussions and potential future obligations stemming	
the Red Data Book species present in the sites.		Measurable Attributes Number of sources cited. Variety of appropriate literature sources (type) used. Number of viable	from the General Fisheries Commission of the Mediterranean (GFCM). While no surveys or field research will be involved, the support of UoM may be sought for provision of guidance.	Timeline To commence by end of April 2019 and conclude by end of April 2020.
		solutions proposed.	The primary focus will be on fishing gears/practices that contact the seabed or otherwise might physically interact with and disturb the biogenic reef forming species which were identified through the LIFE BaĦAR for N2K project. An assessment of feasibility and practicality/ease of implementation will form an integral part of the final report/recommendation that will be produced.	
	MM2: Use of project data post completion	Type of Measure	A) UoM-DoB will be continuing currently ongoing analysis of project data on population, community and ecosystem	Lead/ Participating Entities

Table 4) Life Ba#AR for N2K Project After-LIFE Conservation Plan Management Measures



 A) Continued analysis by UoM-DoB of the project data on species 	Dissemination/ Awareness	ecology and on pressures/impacts influencing marine species and habitats. The outcomes of this analysis will be	ERA; DFA; UoM/ OCEANA
assemblages and marine litter to facilitate scientific dissemination and	Degree of Importance	disseminated in the form of scientific presentations, posters, reports and articles in scientific journals, while	Possible Funding Sources
support management measures and	Advantageous	material of public interest will also be disseminated	National, ERDF
reporting obligations.	Indicators	through outreach measures. Results from these analysis	Estimated Cost
 B) ERA will make use of project data to 	Results and data proactively	will also be made available to ERA to support	Low
fulfil national reporting obligations	shared.	management measures and reporting obligations	
and identify relevant information for	Measurable Attributes		Timeline
site management.	Geospatial information in	B) ERA will be using the results of the project for national	A) Analysis is
C) DFA will utilise project data relevant	form of data layers.	reports and will identify further needs in regard to data	already ongoing,
for fisheries management, especially		analysis for reporting purposes and site management.	particularly by
concerning Council Regulation (EC)		Such analysis may be contracted to relevant experts, if	UoM-DoB, and
No 1967/2006 – the 'MEDREG'.		not catered for under A).	will be concluded
			by the end of the
		C) DFA will further analyse the data collected through the	LIFE BaĦAR After-
		project, specifically that on coralligenous habitats and	LIFE Conservation
		rhodolith accumulations, so as to take any necessary actions as per EC1967/2006.	Plan (2023).
			B) To commence
			by end of 2018
			and conclude by
			the end of the LIFE
			BaĦAR After-LIFE
			Conservation Plan
			(2023).
			C) To commence
			by end of 2018
			and conclude by
			the end of the Q1
			2020
MM3: Investigate and explore options to	Type of Measure	Participating entities will draw upon internal and external	Participating
enhance and facilitate reporting scheme(s)		expertise to review the existing situation with regards to	Beneficiaries
for lost fishing gear from the professional	Study/ Assessment	the reporting of fishing gear lost during operation. Based	DFA; ERA; MESDC



(full and part-time) and recreation sectors for all types of gear used,		on the results of this review, gaps in the current situation can be considered alongside existing and likely future	Possible Funding Sources
assess and outline potential, app automated system-process(es) for	ropriate Necessary	obligations in order to devise optimal solutions. Recommended solutions should meet requirements while	National, EMFF, ERDF
and disseminating the incoming	data. This Indicators	also being practically feasible. In conjunction with these	Estimated Cost (€)
should consider how best to und collation of such data from the v sources, as applicable and/or ava and how best to ensure its onwa dissemination to government en appropriate.	arious feasibilities, operational ailable, details and possible rd implementation of	activities, stakeholders will be consulted for their input regarding the current state-of-play, and for their recommendations/ assessment of suggested possible solutions. MM3 is focusing on further facilitating the reporting by	Low
	gear.	fishermen of lost fishing gear and centralising the	
	Measurable Attributes Number of sources cited. Variety of appropriate literature sources (type) used. Number of viable solutions proposed.	information, thus building on existing obligations to facilitate use of data. The MM will synergise with existing obligations, such as the MSFD PoMs measure addressing accumulated litter from other stakeholders (in relation to Council Regulation (EC) No 1224/2009) and will involve consultation with the relevant authorities as necessary.	Timeline To commence by end of April 2019 and conclude by end of April 2020.
MM4: Design and explore cost-e options for future exploration an		Revisiting the deep-sea habitats for which offshore SCIs have been designated will be an essential part of	Lead/ Participating
revisiting of deep-sea habitats to		monitoring their conservation status. Noting the myriad	Beneficiaries
of eventual long-term monitoring management programs for the o		of logistical and financial challenges faced, a research program will be undertaken to elucidate possible	ERA/ UoM; MESDC
Life BaĦAR SCIs. This program sh synergy with, and capitalise on, o	-0	solutions.	Possible Funding Sources
initiatives and reporting obligation undertaken through the MSFD a		This MM links to the MSFD updating of the monitoring programme, as Member States are required to update	National, ERDF, EMFF,
	Indicators	these for monitoring purposes by 2020. For Malta, this	Estimated Cost (€)
	Publication of a report on possible methods to revisit and monitor deep-water habitats in the offshore Life BaĦAR SCI MPAs.	will include monitoring processes that will be used to assess the environmental status in terms of MSFD Descriptors 1 & 6 for habitats identified through the project.	Medium
	Measurable Attributes	7	Timeline



	Number of viable options proposed. Number of literature and expert sources referred to. Variety of appropriate sources (type) referenced.	Consultation will be sought with appropriate experts, from both the private and public sectors, to assess the current state-of-play vis-à-vis technologies used for exploring depths between 300-1000m bathymetry. Realistic future paradigms will also be explored. The results of these literature and expert consultation reviews will be considered in the light of site management/ monitoring requirements Participating entities will then draw up a report offering a suite of recommendations on possible technical monitoring solutions, ranging from relatively "low" to "high" budget scenarios. External expertise would be required at a later stage to assess the costs for implementation any recommendation(s) put forward, after the MSFD	To commence by end June 2019 and conclude in 2020.
MM5: Characterise specific, large and/or interesting coastal caves, including their physical dimensions, ecological community structures and threats/pressures present via 'broad-brush' surveys. The primary focus being to identify/prioritise coastal caves for baselining and establishment of appropriate management measures in	Type of Measure Study/ Assessment Degree of Importance Necessary	 monitoring programme has been updated by ERA. Priority will be given to caves identified through the LIFE BaHAR project as being highly diverse or otherwise of interest. The scope of this activity is focused on caves within 40m bathymetry. Initially, a scoping exercise will be undertaken to determine appropriate methodologies and techniques that can be developed/used in order to map and 	Lead/ Participating Beneficiaries ERA/ UoM Possible Funding Sources National, EU,
later N2K site management. Data from the LIFE BaĦAR for N2K project will be used to target the sea caves which appeared to host the most biodiversity and support the	Indicators Characterisation details produced for selected coastal sea caves.	characterise caves. The primary approach however, will focus on 'broad-brush' surveys which can be expanded upon as necessary/possible.	Sponsorship Estimated Cost Medium
baselining process.	Measurable Attributes Number of caves characterised/prioritised	External assistance will be sought when expertise is not held in-house by any of the participating beneficiaries. This might include data processing and image generation during the later stages, or conducting/supporting dives in deeper or more technically demanding cave environments.	Timeline To commence by end June 2019 and conclude by end December 2022.



	MM6: Seek to provide a process/system to assist seabed cleaning events, projects and/or initiatives tackling marine litter and ALDFG predominantly within the in-shore SCIs (within 50m bathymetry).	Type of Measure Administrative/ Awareness Degree of Importance Advantageous Indicators Formation and operation of the outputs/functions of the MM. Measurable Attributes	The key output of this measure will be the determination of a representative set of caves for future N2K site monitoring, which will address national monitoring programme needs and begins to address gaps identified (through the MSFD Initial Assessment) in marine monitoring programmes around the Maltese Islands. The purpose of the resulting system/process from this measure will be to optimise sea clean-up initiatives around Malta. It will: provide information on "problem" areas that require attention; log the various clean-up activities taking place (to reduce overlaps and help maximise coverage); provide assistance with acquiring permits; provide a funnel through which significant data on marine litter can be gathered (for MSFD and site management) and, offer guidance and support in the form of best practice recommendations.	Lead/ Participating Beneficiaries ERA/ MESDC; TM Possible Funding Sources National, EU, Sponsorship Estimated Cost Low Timeline
		Number of clean-ups making use of services provided through the outputs of this MM. Waste statistics removed under the auspices of the alliance.		To commence by end June 2019 and run indefinitely.
CO3: To ensure synergistic management with other relevant MPAs.	MM7: Conservation Measures for the LIFE BaĦAR sites (including both novel designations and extensions to existing marine N2K SCIs) will be developed in conjunction with the development of Conservation Measures for Malta's existing network of N2K MPA SCIs and SPAs.	Type of Measure Legislative/ Administrative Degree of Importance Critical Indicators	The creation of Conservation Measures for LIFE Ba#AR N2K SCIs will be seamlessly integrated into ERA's existing work-packages targeting the creation of effective, comprehensive Conservation Measures for Malta's previously existing network of N2K MPA SCIs and SPAs. This will dramatically expedite the process of Conservation Measure creation and implementation for the LIFE Ba#AR SCIs, and enable their Conservation	Lead/ Participating Beneficiaries ERA/ MESDC; DFA Possible Funding Sources National Estimated Cost



		Conservation Measures	Measures to draw upon insights gained from the first	Low
		developed, published and	round of stakeholder consultations, which were held in	
		implemented for all LIFE	2017 for the previously designated N2K MPA sites. The	
		BaĦAR N2K SCI sites.	added benefit of this action is the harmonisation of	
		Measurable Attributes	Malta's N2K MPA network in relation to stakeholders and	Timeline
		Number of Conservation	the nationwide implementation of their respective	In progress,
		Measures produced. The	Conservation Measures.	intended date of
		date(s) of Conservation		conclusion by end
		Measure implementation	Project results, particularly those linked to stakeholder-	December 2019.
		(in relation to their	conflicts, will be incorporated into the process. This will	
		scheduled implementation	assist the stakeholder consultation phase in the creation	
		as planned).	of the Conservation Measures and also lead to	
			development of measures and actions within these plans	
			to address such issues.	
CO4: To raise public	MM8: Contribute to on-going initiatives	Type of Measure	Materials produced through the project will be used to	Lead/
awareness and	and seek opportunities to raise public		continue promotion of the results and findings emanating	Participating
appreciation of the	awareness of project results, using		from LIFE BaĦAR. This may include attending events,	Beneficiaries
habitats and species,	material produced by the project, including	Dissemination/ Awareness	delivering presentations and other modes of	ERA/ UoM; DFA;
among specific target	maintenance and updating of the project		communication to reach both target audiences and the	MESDC
groups and the general	website.	Degree of Importance	general public.	Possible Funding
public.				Sources
		Necessary	Topics should include both the habitats and species	National,
			identified through the project, as well as raising	Sponsorship
		Indicators	awareness on the threats and pressures which threaten	Estimated Cost
		Number of events attended.	them.	Low
		Number of projects/events		
		using material produced	This action will also ensure that the project website is	
		through the LIFE BaĦAR for	maintained and kept updated for the 5-year period (as	
		NK project.	required) following the close of the project.	
		Measurable Attributes		Timeline
		Number of persons and		To continue at
		entities attending events.		close of project
		Number of published		and continue until



		materials disseminated per event and in total.	-	end December 2023.
	MM9: Promote and incentivise courses/lectures on deep-sea and cave biology, ecology, conservation and management at UoM-DoB.	Type of Measure Dissemination/ Awareness Degree of Importance	UoM, with support from ERA and other relevant organisations/entities, will seek to incorporate targeted academic lectures on deep-sea and cave biology, ecology, conservation and management into their existing academic programs. The material delivered will focus on the conservation targets and themes elucidated from the	Lead/ Participating Beneficiaries UoM/ ERA Possible Funding Sources
		Necessary Indicators Delivery of relevant lectures/courses at UoM- DoB.	LIFE BaĦAR project. In addition, dedicated short courses or other activities intended to bring these themes to a wider audience may be organised. The UoM will also train research students to work in these fields by continuing to offer undergraduate and/or postgraduate research	National Estimated Cost Low
		Measurable Attributes Number of lectures delivered. Number of students following the lectures/course, and number of students receiving certification/passing assessment.	projects in deep-sea biology, ecology or conservation and management. This will lead to increased number of deep- sea specialists being trained locally, who can progress into environmental management careers. This will help generate long-term sustainability in terms of appropriate expertise for site management.	Timeline To commence by end January 2020 and conclude (i.e. finalise and implement) ready for the 2021 academic year.
CO5: To ensure that anthropogenic activities occurring in the area are carried out in a manner that do not jeopardise the sites' conservation objectives.	MM10: Contribute to the development of guidelines (e.g. code of conducts) for activities within the MPAs in order to reduce potential impacts.	Type of Measure	The data obtained and observations made through the Life BaĦAR project will contribute to the MSFD PoMs (measures MICMT-M074_NEW and MICMT- M077_NEW ²) for the development of guidelines and best practices for seafarer and divers and shall extend these by including guidance on sensitive habitats, such as caves in regard to navigation and diving. The appropriate entities and stakeholders will be	Lead/ Participating Beneficiaries
		Dissemination/ Awareness	consulted and relevant expertise drawn upon in the	ERA/ MESDC; DFA

² <u>https://era.org.mt/en/Documents/POMs_SummaryReport_Malta2017.pdf</u> [Accessed 01/10/2018]



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	Degree of Importance Necessary Indicators Publication of sector/activity specific guidelines ('Codes of Conduct').		Possible Funding SourcesNational, ERDF, SponsorshipEstimated CostLow	
		Measurable Attributes	Once finalised, the codes of conduct should be published and promoted to gain maximum traction with the general	Timeline
		Number of units produced for physical dissemination. Number of persons reached via online (email/ social media) communications.	public and appropriate stakeholders.	To conclude by end December 2019.
	MM11: Reducing the impact from ALDFG through investigating, encouraging and facilitating the use of proven/viable	Type of Measure	Life Ba#AR project data will continue to inform the implementation of the MSFD measure (MICMT- M083_NEW ³), which aims to identify options for redesigning fishing gear or practices to reduce discarded or lost fishing gear. This measure seeks to respond to information published as part of the LIFE Ba#AR for N2K	Lead/ Participating Beneficiaries
	alternative designs/materials, where	Administration		ERA/ DFA; MESDC
	appropriate, across as many fishing gear types as possible and/or applicable.	Degree of Importance		Possible Funding Sources
		Advantageous	project, which indicated that ALDFG is a significant	National, EMFF
		Indicators	negative impact. Noting several ongoing projects	Estimated Cost
		Implementation progress under MSFD	targeting similar objectives, this measures (as part of the After-LIFE Conservation Plan) will operate in synergy and	Medium
		Measurable Attributes	capitalise upon the momentum and data outputs of the	Timeline
		LIFE BaĦAR for N2K project.	To commence by end April 2020 and conclude by end April 2022.	

³ <u>https://era.org.mt/en/Documents/POMs_SummaryReport_Malta2017.pdf</u> [Accessed 01/10/2018]



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MM12: Initiating an initiative/car reduce litter inputs into the sea fr fishing and aquaculture activities, conducting a scoping exercise to sources and respective significant	om including delineate Administrative/	 ERA will lead an awareness and information campaign to draw attention to draw attention to the issue and promote best practices/ possible solutions that can be easily implemented to help reduce waste quantities without negatively impacting typical operations. In conjunction with this, ERA and the DFA will progress toward producing a compatible set of guidelines to mandate certain actions for fishing/ aquaculture 	Lead/ Participating Beneficiaries ERA/ MESDC; DFA Possible Funding Sources National, ERDF, Sponsorship
	Indicators Information/outreach campaign is initiated. Creation/ publication of official Government Notice/ appropriate legal mechanism to better regulate/ manage waste streams from fishing/ aquaculture operations.	operations occurring within the LIFE Ba#AR SCIs to reduce litter inputs. This measure will synergise with similar efforts under the MSFD and the development of N2K MPA Conservation Measures in general. Additionally, it should involve an appropriate level of stakeholder consultation, and be preceded by a suitable scoping exercise to target the measure on key issues that can be addressed within the timeframes and capacities available.	Estimated Cost
	Measurable Attributes Number of fishers and businesses (aquaculture operators) reached by communications. Litter monitoring data streams from EMFF MSFD monitoring project.		Timeline To commence by end December 2019 and conclude by end December 2023 (the end of the After-LIFE program).



FINANCIAL OUTLOOK

It is estimated that a maximum budget of € 300,000.00 will be required to implement the After LIFE plan, with the main areas of expenditure being:

- Staff costs for data analysis, measures development and related procurement, monitoring and management of measures
- External assistance for specific expertise and targeted monitoring
- Consumables for meetings with stakeholders (venue, refreshments, etc.)

The actual cost of After-LIFE plan implementation is anticipated to be much lower, noting the maximum estimate is calculated based on addition of all MM expenditure range upper limits.

It is planned that funding will be sourced through national funds (costs integrated in ERA and other relevant budgets), while EU funding sources will be explored where possible.

Certain measures, such as data analysis by UoM and MESDC-DFA, will be catered for through the entities' budgets as part of their ongoing work and priorities.

Lessons learnt through the project which have been considered, include:

- The need to allocate sufficient resources and time for technical development and management of measures, including those relating to public awareness;
- Public awareness deliverables will require technical input in order to be scientifically correct and to ensure that the target audience is effectively reached, for which resources (in-house and external) need to be catered for;
- Integration of flexibility in relation to timing of actions and deliverables, in view that procurement processes may take longer than planned or may not be immediately successful.

SUMMARY

The LIFE Ba#AR for N2K project led to the successful designation of three new MPAs and extended five previously designated MPAs. These newly designated areas expand Malta's MPA network for the conservation of marine habitats.

Data collected through the LIFE Ba#AR for N2K project, addressed knowledge gaps on sea cave and reef habitats in Malta's FMZ and will help to inform future management of the marine environment.

The After-LIFE Conservation Plan will continue to fulfil the aims of the project in terms of raising awareness, maximising data use and drawing upon information gathered on threats and pressures identified through the project to improve management actions.

Beyond these tangible results, the LIFE Ba#AR for N2K project has been a shining example of positive collaboration between local Maltese entities (DFA, ERA, MESDC and UoM) and the non-governmental organisation, Fundación OCEANA.



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