



LIFE Project Number
LIFE12 NAT/MT/000845

FINAL Report
Covering the project activities from 01/10/2013 to 30/06/2018

Reporting Date
31/10/2018

LIFE+ PROJECT NAME or Acronym
LIFE BaHAR for N2K

Project Data

Project location	Malta
Project start date:	01/10/2013
Project end date:	30/06/2017 Extension date: 30/06/2018
Total Project duration (in months)	57 months (including Extension of 12 months)
Total budget	€ 2,612,810
Total eligible budget	€ 2,612,810
EU contribution:	€1,306,405
(%) of total costs	50%
(%) of eligible costs	50%

Beneficiary Data

Name Beneficiary	Environment and Resources Authority
Contact person	Ms Marie Therese Gambin
Postal address	Hexagon House, Spencer Hill, Marsa, MRS 1441, Malta
Visit address	Hexagon House, Spencer Hill, Marsa, MRS 1441, Malta
Telephone	+356 2292 3659
Fax:	N/A
E-mail	lifebahar@era.org.mt
Project Website	http://lifebahar.org.mt/

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List of Abbreviations

AEPO	Assistant Environment Protection Officer
BWU	Biodiversity & Water Unit
CB	Coordinating Beneficiary
CO	Conservation Objective
CP	Common Provisions
CSD	Continental Shelf Department
DoC	Department of Contracts
EC	European Commission
EIA	Environmental Impact Assessment
EPO	Environment Protection Officer
ERA	Environment and Resources Authority
EUNIS	European Nature Information System
FDO	Financial Desk Officer
FMZ	Fisheries Management Zone
GA	Grant Agreement
GCC	General Contracts Committee
GDPR	General Data Protection Regulations
GIS	Geographic Information System
IA	Initial Assessment
IncR	Inception Report
IUCN	International Union for Conservation of Nature
LN	Legal Notice
MC	Management Committee
MEPA	Malta Environment and Planning Authority
MFIN	Ministry for Finance
MESDC	Ministry for the Environment, Sustainable Development and Climate Change
MESDC-DFA	Ministry for the Environment, Sustainable Development and Climate Change - Department of Fisheries and Aquaculture
MPA	Marine Protected Areas
MSFD	Marine Strategy Framework Directive
MtR	Midterm Report
NGO	Non-governmental Organisation
NBSAP	National Biodiversity Strategy and Action Plan
PA	Partnership Agreement
PDPID	Policy Development and Programme Implementation Directorate within MESDC
PR	Public Relations
PrR(I)	Progress Report (I) - submitted in 2015
PrR(II)	Progress Report (II) - submitted in 2017
pSCI	Proposed Site of Community Importance
ROV	Remotely Operated Vehicle
SC	Scientific Committee
SCH	Superintendence of Cultural Heritage
SCI	Site of Community Importance
SCUBA	Self-contained underwater breathing apparatus
SEPO	Senior Environment Protection Officer
SMT	Senior Management Team
SPA	Special Protection Area
TDO	Technical Desk Officer
UoM-DoB	University of Malta - Department of Biology
VMS	Vessel Monitoring System

2. Executive Summary

The main aim of the LIFE BaHAR for N2K (LIFE12 NAT/MT/000845) project - '*Life+ Benthic Habitat Research for marine Natura 2000 site designation*' - was to extend existing marine Sites of Community Importance (SCIs), if necessary, and to designate new areas as SCIs within Malta's waters (from coastal areas up to the 25 nautical mile boundary of the Malta Fisheries Management Zone) to form part of the Natura 2000 network.

The project gathered 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).

As a result of the findings, the project led to the declaration of 8 pSCIs, established to protect reefs and sea caves:

- Three inshore sites, extensions to existing coastal SCIs, declared for the protection of reefs and sea caves;
- Five offshore areas declared for the protection of reefs and sea caves - two completely new sites and three extensions to existing offshore pSCIs.

This led to an overall increase of 700 km² in marine protected area compared to 2016.

A total of 148 sea caves (habitat 8330), of which 131 are inshore caves and 17 newly discovered offshore caves, are now covered by the extended and newly designated sites. The coverage of reef habitats (1170) has also increased, both in coastal areas but especially in the offshore areas which were chosen based on the presence of reef structures and offshore caves in deep waters. The area covered by this habitat within the pSCIs and SCIs has increased by 103.3 km², i.e. 107.63 km² compared to 4.33 km² in 2012.

The expected longer-term results of the project are to achieve sufficiency in line with Habitats Directive requirements for two of the three Annex I habitats that are the focus of the project, namely reefs and sea caves, and to maintain/improve the conservation status of these habitats.

The Natura 2000 and Habitats Directive requirements for the third habitat type, sandbanks, have been deemed sufficient in 2016.

The project commenced on 1st October 2013 and concluded on 30th June 2018; the project was originally planned to conclude in June 2017, but the end date was postponed by one year through an amendment to the Grant Agreement (signed in February 2016). The amendment entailed shifting of all project actions by one year, with partial rescheduling of certain actions (A2 & A3) so as to ensure that the project objectives are reached.

Another request for amendment - for a change in the Coordinating Beneficiary - was submitted in July 2016 and agreed to by the Commission on 12th August 2016. The Amendment came into effect as of 4th April 2016, following signature by the European Commission on 21st October 2016. The request was submitted following the MEPA demerger of 4th April 2016, in which the technical and financial responsibilities of MEPA as Coordinating Beneficiary of the LIFE BaHAR for N2K project were taken over by ERA.

This Final Report covers the whole project duration between 1st October 2013 and 30th June 2018.

Over the course of the project, another four reports were submitted to the Commission:

- Inception Report (IncR) for the period 1st October 2013 to 31st October 2014;
- Progress Report (PrR1) for the period 1st November 2014 to 30th September 2015;
- Mid-Term Report (MtR) for the period 1st October 2013 to 30th September 2016;
- Progress Report (PrR2) for the period 1st October 2016 to 31st October 2017.

Administrative Part

The Malta Environment and Planning Authority (MEPA) was the Coordinating Beneficiary for the project until 3rd April 2016, after which the Environment and Resources Authority (ERA) took over the technical and financial responsibilities of MEPA as Coordinating Beneficiary of the LIFE BaHAR for N2K project. The Grant Agreement was amended accordingly.

There are four Associated Beneficiaries: the Ministry for the Environment, Sustainable Development, and Climate Change (MESDC)¹, the Department of Fisheries and Aquaculture within MESDC (MESDC-DFA), the University of Malta represented by the Department of Biology (UoM-DoB), and Fundación Oceana.

During the project, a number of personnel were recruited to work specifically on the project: two research support officers were recruited on a part-time basis by UoM-DoB, a full-time project assistant was recruited by MESDC-DFA and another by MEPA/ERA, and a full-time project officer was recruited by Oceana. There were delays in the initial recruitment of these personnel, in particular that of the MEPA and DFA project assistants, which in turn had repercussions on the implementation of various actions. Over the course of the project there were changes in the staff assigned to fill various roles. In relation to the temporary staff recruited for the project, fresh calls were issued in 2015 and 2016 for the Oceana project administrator and ERA project assistant respectively. Various crew were also recruited on a temporary basis by Oceana for the surveys in 2015 and 2016.

For coordination among the project partners, a Management Committee (MC) and a Scientific Committee (SC) were set up through Action F1. The MC, composed of representatives of all the beneficiaries, oversaw the project implementation in accordance to the established work programme and achievement of objectives set. The SC (composed of representatives from MEPA/ERA, UoM-DoB, MESDC-DFA and Oceana) was involved in preparatory actions A1, A2, A3, A4 and A5 by providing scientific direction. During the project duration, seven meetings of the MC and thirteen meetings of the SC were held. Regular communications and consultation via email also took place.

Five EU monitoring visits took place during the reporting period, namely on 7th March 2014, 16th July 2015, 15th February 2016, 21st March 2017 and 20th June 2018.

From a project management point of view, the main problems encountered in the project were related to the initial delays to commence, the protracted process to recruit personnel for the

¹ Originally the Ministry for Sustainable Development, the Environment and Climate Change; the Ministry's name was changed in 2017 following national elections.

project (in particular MESDC-DFA and MEPA project assistants), and the difficulties linked to the tender process for the multibeam survey. These resulted in the need to postpone the end date of the project by one year and reschedule certain actions.

Technical Part

The project involved the collection of existing data (Action A1), collection of new data through marine surveys (Action A3), interpretation of data and prioritisation of important areas (Action A2), identification of pSCIs (Action A5) and of conservation objectives for each site (Action A7), and the designation process (Action A6). A GIS system was also developed (Action A4) and updated, and this fed into different actions in the course of the project. The identification of diversification of tasks for stakeholders being impacted by the designated sites was also carried out (Action A8).

The activities carried out during the project included:

- Gathering and mapping of existing habitats and pressures data (MESDC-DFA - A1);
- Interpretation of data collected through Action A1 for gap analysis and recommendations for the first set of marine surveys, and the interpretation of data collected through Action A3 phase 1, including recommendations for the second set of marine surveys (UoM-DoB -- A2);
- Two marine habitat expeditions by Remotely Operated Vehicle (ROV) and SCUBA diving (Oceana -- A3);
- Bathymetric surveys using multibeam echosounder and associated sediment sampling carried out in August 2016 (contracted by ERA -- A3);
- Analysis of the data collected in the habitat surveys, and production of species and marine litter maps (Oceana -- A3);
- Final interpretation of all the data collected in order to identify priority areas for protection (UoM-DoB -- A2);
- Participation in two international conferences and publication of 4 scientific articles (UoM-DoB -- A2);
- Mapping of new data and development of habitat maps and pSCI maps (UoM-DoB, Oceana and ERA -- A4);
- Identification of the boundaries for the new pSCIs (ERA -- A5);
- Designation of new pSCIs for reefs and sea caves -- 2 new sites and extensions to 6 existing sites (MESDC - A6);
- Development of conservation objectives for the new and extended sites (ERA - A7);
- Production of an online data viewer with project survey findings (Oceana - A3);
- Interviews with stakeholders to identify conflicts; carrying out of livelihood analysis and drafting of best practice guidelines (MESDC-DFA - A8);
- Meetings with LIFE+ Migrate and LIFE+ Malta Seabirds projects and other networking (ERA - A5/F3).

An After-LIFE Conservation Plan (ERA - F5) was developed and finalised following project conclusion.

The project also had a strong component of awareness-raising and communication actions, the objectives of which were to enhance stakeholder understanding of conservation and management of marine resources, the project, LIFE+ funding and the Natura 2000 Network, and to increase participation by and coordination of stakeholders.

The public awareness activities carried out during the project included:

- Project launch (E1);
- Production of project stationery (4000 notepads and biros) and their dissemination (E2);
- Issue of press releases, web banners and email-shots; radio and TV interviews (E2);
- Production and airing of 6 info-slots (E2);
- Production of 5 short videos (2-4 min) using survey footage on MPAs and pressures, and sharing with stakeholders/general public (E2 - additional);
- Regular updates during Oceana's surveys through uploading of onboard diaries and videos (E2);
- Launch of the Facebook page and YouTube channel and updating thereof (E2);
- Implementation of the outdoor travelling photographic exhibitions in 6 localities over the summer in 2015 and 2016 (E3);
- E3 prints utilised for another two events in 2017; 20 prints from project surveys produced and exhibited in 2018 (E3 - additional);
- Publication of 5000 notebook calendars and their dissemination (E3);
- Production and dissemination of four leaflets with information on (respectively) the project, marine habitats, project findings and new MPAs (E3);
- Four stakeholder seminars held - one each in 2014 and 2015, and two in 2017 (E4);
- LIFE BaHAR for N2K conference on Marine Protected Areas held in 2017 (E4);
- Launch of the project website and updating thereof (E5);
- Production of 3 roll-up banners, the production and installation of 6 notice-boards in 2015, and updating/replacement of the 6 noticeboards with information on the new sites in 2018 (E6);
- Production of a Layman's Report in English, Maltese and Spanish (E7);
- Closing event (E8).

Environmental Benefits

The designation of Natura 2000 sites is the first step in the protection and management process, for which the conservation objectives and After-LIFE Conservation Plan, developed as part of the project, have set out targets and a strategy to be followed by ERA together with the project partners and relevant stakeholders following project completion. The relevant and responsible entities for the After-LIFE plan will be identified following stakeholder consultations with the relevant bodies, as happened when developing the national Marine Monitoring Plan and in the development of the MSFD Programme of Measures.

The designation of protected areas for reefs and sea caves through the project is hence of direct relevance and benefit in relation to the objectives of the Habitats Directive, enabling Malta to conserve important habitats, and for two specific measures in Malta's National Biodiversity Strategy and Action Plan (NBSAP) which reflects the EU Biodiversity Strategy until 2020.

The habitats and species data collected through the project is also of importance from a research perspective, in view of the significant data gaps on marine habitat data that existed at the start of the project. The data collected will also be of benefit for the fisheries sector, to help guide policy and regulatory measures that may be deemed necessary.

From a policy perspective, the project has addressed data gaps, which limited the coverage of the monitoring processes in the marine environment. Within this context, the results of the project

will serve to inform the further development of monitoring regimes on both listed and predominant MSFD habitats and hence enable the assessment of environmental status over a wider marine area.

Financial part

The project budget was €2.6 million, of which 50% was co-financed by the EU LIFE funding programme.

The actual total costs incurred by the LIFE BaHAR for N2K project amounted to €2,602,865.56, equivalent to 99.6% of the budget in the GA. Hence, the overall project costs are within the total budget allocated in the GA.

However, the actual costs in the Personnel, Consumables and Other Direct Costs cost categories have exceeded those allocated in the GA. Conversely, there have been savings in the External Assistance, Durable Goods and Travel & Subsistence cost categories.

3. Introduction

3.1 Background, problem and objectives

The main aim of the LIFE BaHAR for N2K (LIFE12 NAT/MT/000845) project - '*Life+ Benthic Habitat Research for marine Natura 2000 site designation*' - was to extend existing marine Sites of Community Importance (SCIs) and, if necessary, designate new areas as SCIs within Malta's waters (from coastal areas up to the 25 nautical mile boundary of the Malta Fisheries Management Zone) to form part of the Natura 2000 network.

The four primary objectives of the project were:

- Inventory and designation;
- Increase participation and coordination of stakeholders;
- Conservation objectives for marine Natura 2000 sites; and
- Increase awareness.

The project gathered 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).

The project area was the Fisheries Management Zone (FMZ), including Territorial Sea of the Maltese Islands, which covers an area from the baseline of the Maltese Islands out to 25 nautical miles.

The project area included five SCIs at time of commencement of the project. Another 3 areas as pSCIs for Annex II species and 8 areas as Special Protection Areas (SPAs) were identified in 2016 through the LIFE+ Migrate and LIFE+ Malta Seabird projects respectively².

The project targeted the following conservation problems and threats:

- Insufficient/lack of marine habitat data and analysis/interpretation;
- Insufficiency of marine Natura 2000 designated sites;
- Minimal coordination by key stakeholders with an interest in marine activities, research interests, protection and management;
- Certain fishing gears, navigation especially anchoring and infrastructures developments;
- Lack of conservation objectives for marine Natura 2000 sites; and
- Lack of awareness of marine Natura 2000 sites and the marine environment.

3.2 Socio-economic context

Throughout the FMZ, the following fishing activities are allowed: small-scale fishing using vessels smaller than 12m in length, larger vessels in designated trawling zones, fish-aggregating devices (used during specific periods), small-scale purse-seining, and fishing for tuna, swordfish and other highly migratory species.

² Two of the identified areas are both pSCIs and SPAs

Short Sea Shipping is the main form of maritime transport. Cruise liners sailing in the Mediterranean call at Valletta port; cargo berths attract shipping lines further connecting Malta to other Mediterranean ports. Trans-shipment of containers and petroleum products occurs through Marsaxlokk port.

A number of anchorage areas for the yachting sector's vessel related requirements have been established around the Maltese Islands.

In terms of the energy sector, a Sicily - Malta interconnector cable has been developed to connect Malta to the European energy grid; the sea within the FMZ is also being considered for renewable energy infrastructure.

The establishment of marine SCIs may indirectly benefit the fishing, diving and tourism industries:

- Establishing SCIs may indirectly benefit the fishing industry by protecting areas with high biodiversity and critical habitats, which may hence result in an increase in fish stocks;
- Establishing SCIs may also benefit the diving sector, especially when considering sites that are accessible for diving; this is since sites hosting important habitats and species could benefit from the establishment of codes of conduct, allowing for the preservation of areas with important and interesting biodiversity components also for posterity;
- Activities related to designated SCIs, such as environment-friendly tours, could be organised; these could be considered as an alternative form of tourism activities.

The project provided a number of employment opportunities, namely through the recruitment of personnel specifically for the project. Other benefits included the transfer of knowledge gained from collaboration with the other partners, while in the longer run employment opportunities may arise in relation to the management of the sites designated through the project.

Apart from the various positive socio-economic impacts, there are potentially some which verge on being negative. These would depend on the measures set to manage the sites in question, which could potentially include aspects affecting fishing opportunities (e.g. leading to decreased catch), maritime activities (e.g. shipping) and recreation (e.g. diving). Another negative impact could be the perception of the channelling of finances to implement management in the new sites, which could otherwise be used for other projects that may be seen as more socially attractive. All efforts shall be made to allow for overall positive results for affected sectors.

3.3 Expected longer-term results

The expected longer-term results of the project are to achieve sufficiency for two of the three Annex I habitats that are the focus of the project, namely reefs and sea caves, and to maintain/improve the conservation status of these habitats. The Natura 2000 and the Habitats Directive requirements for the third habitat type, sandbanks, were deemed sufficient in 2016.

While the aim of the project was the designation of Natura 2000 sites, it was not possible at the start of the project to predict the area of the habitat to be protected since this depended on the outcomes of the research carried out, while any increase of habitats and/or change in habitat conditions depended on the eventual designation and conservation measures to be established and applied in the future. The expected longer term results (post-project), as identified at the end of the project, are detailed in section 5.4.

4. Administrative part

4.1 Description of the management system

4.1.1 Tasks and Phases of the LIFE BaHAR for N2K project

The project commenced on 1st October 2013 and concluded on 30th June 2018. The project was originally due to be concluded in June 2017; however, the timeframe was extended through an amendment to the Grant Agreement.

The Gantt chart in Figure 4.1 overleaf presents the timeframes for the different actions, as originally planned, as amended through said amendment to the Grant Agreement, and actual progress as at end June 2018. An update on the Milestones of the project is provided in section 5.3.

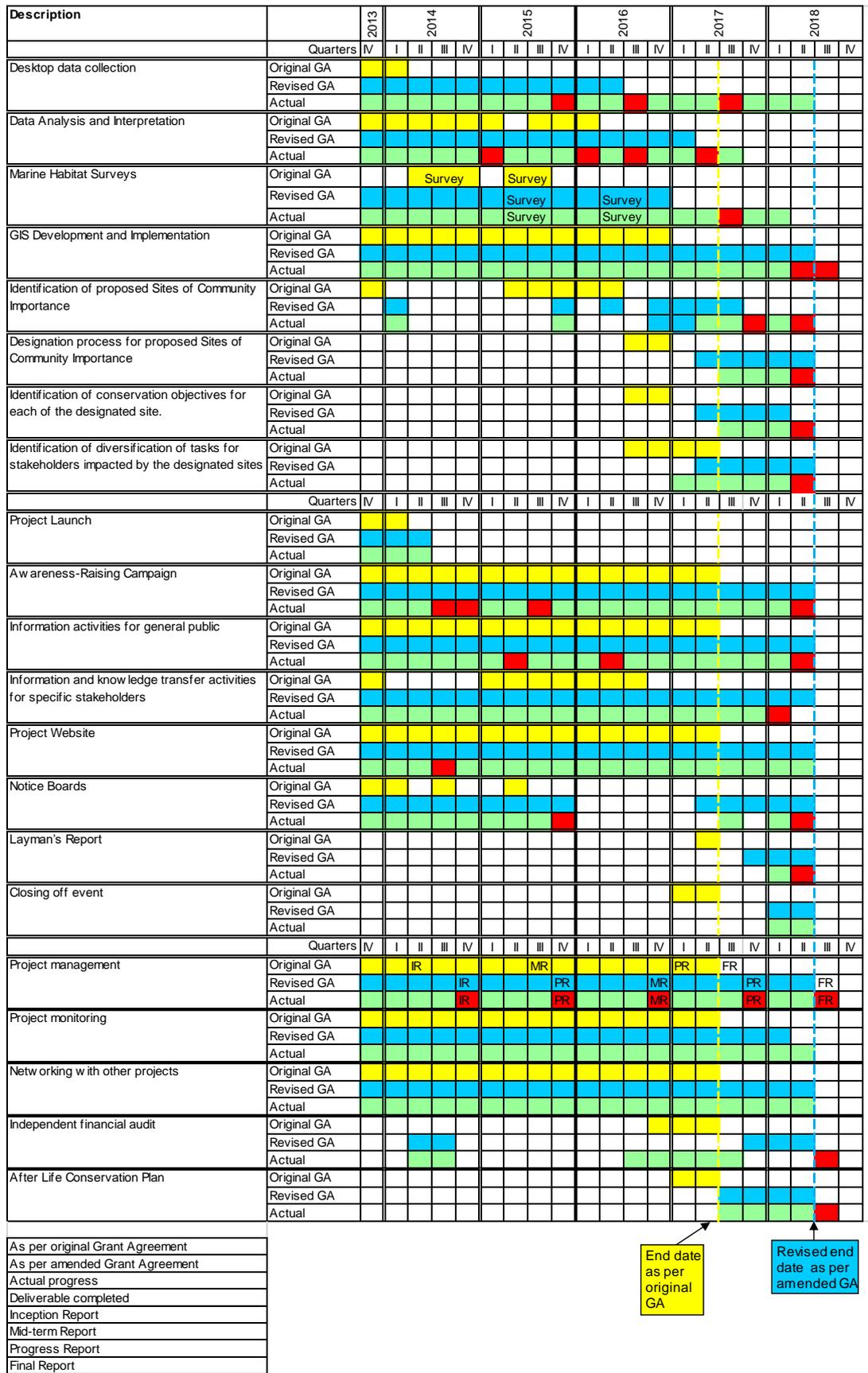


Figure 4.1: Gantt chart showing actual progress in relation to the original timeframes in the Grant Agreement, and revised timeframes as per amended Grant Agreement

4.1.2 Beneficiaries, project planning and monitoring

The Malta Environment and Planning Authority (MEPA) was the Coordinating Beneficiary for the project until 3rd April 2016.

Following the demerger of the Malta Environment and Planning Authority (MEPA) in April 2016, the Environment and Resources Authority (ERA) took over the technical and financial responsibilities as Coordinating Beneficiary of the LIFE BaHAR for N2K project, through an Amendment to the Grant Agreement that came into effect as of 4th April 2016.

There are four Associated Beneficiaries: the Ministry for the Environment, Sustainable Development, and Climate Change (MESDC), the Department of Fisheries and Aquaculture within MESDC (MESDC-DFA), the University of Malta represented by the Department of Biology (UoM-DoB), and Fundación Oceana.

The LIFE BaHAR project team organigram is shown below:

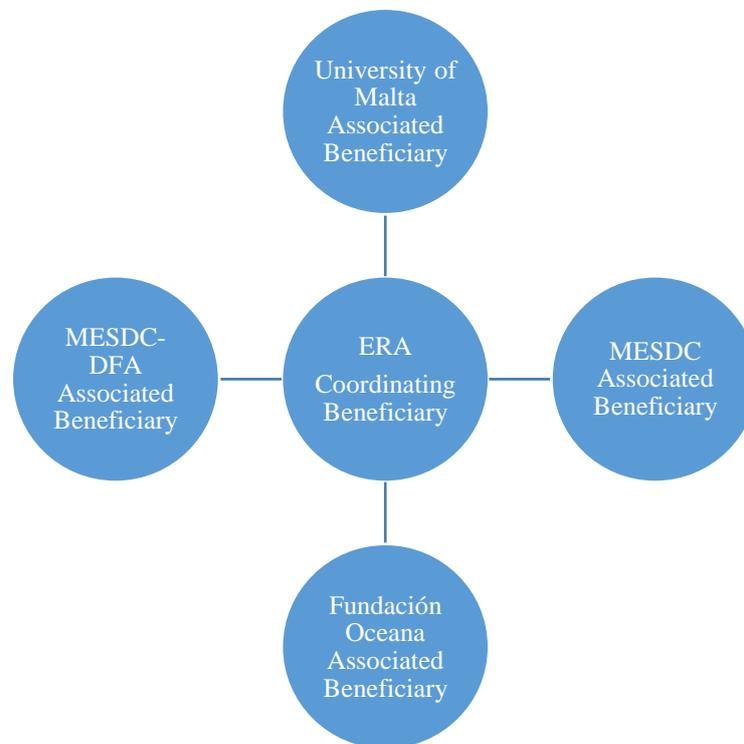


Figure 4.2: Organigram of the LIFE BaHAR for N2K project

For coordination among the project partners, a Management Committee (MC) and a Scientific Committee (SC) were set up through Action F1.

The role of the MC was to oversee that the project goals were being achieved in a timely and efficient manner. The MC provided guidance with regard to project goals and deliverables and in resolving project issues. Representatives of all the beneficiaries participated in the MC meetings.

The SC was responsible for confirming the work programme related to actions A1, A2, A3, A4 and A5. The SC was also presented with the scientific reports and habitat mapping delivered through actions A1, A2, A3, A4 and A5, and endorsed the reports delivered through action A2. The SC was composed of representatives from MEPA/ERA, UoM-DoB, Oceana and MESDC-DFA.

The MC met seven times over the course of the project, while the SC met 13 times.

There was also regular exchange of technical and financial information between the beneficiaries.

4.1.3 Project Beneficiaries

4.1.3.1 MEPA/ERA (Coordinating Beneficiary)

The Coordinating Beneficiary (CB) at project application and project commencement stage was the Malta Environment and Planning Authority. Following the demerger of said Authority on 4th April 2016, the Environment and Resources Authority (ERA) took over the role of Coordinating Beneficiary.

ERA is the national environmental regulator and hence maintains consultation with stakeholders so as to promote and instil sound environmental management. Established in 2016, ERA took on the environment regulatory functions previously carried out by the Environment Protection Directorate within the Malta Environment and Planning Authority.

The project was led by the Ecosystems Management Unit within MEPA, and then by the Biodiversity & Water Unit (BWU) within ERA. Throughout the project, support was provided by various units/teams within the Authority, in terms of procurement, financial and legal aspects, information resources and communication.

4.1.3.2 MESDC (Associated Beneficiary)

The Ministry for the Environment, Sustainable Development and Climate Change (MESDC) is responsible to ensure the implementation of the EU environment acquis and for environmental protection in the Maltese Islands, as well as being responsible for agriculture, fisheries and animal welfare policies. Specifically on environment, this includes nature and biodiversity, air quality and waste.

The involvement of this beneficiary was coordinated through the Policy Development and Programme Implementation Directorate within the Ministry.

4.1.3.3 MESDC-DFA (Associated Beneficiary)

The Department of Fisheries and Aquaculture (MESDC-DFA) was represented by the Capture Fisheries Section, which is the national institution responsible for scientific monitoring and research related to capture fisheries, including the provision of scientific advice concerning fisheries to the Maltese government, based on EU obligations.

The team working on the project included a team manager and a project officer; the latter role was recruited specifically for the project.

4.1.3.4 Fundación Oceana (Associated Beneficiary)

Oceana is the largest international organisation solely dedicated to protecting the world's oceans, with a strong record of accomplishment on fisheries management and habitats protection over the last decade. It was created in 2001 by a group of foundations who were concerned about the lack of protection afforded to the world's oceans.

In order to guarantee the correct implementation of Oceana activities in the LIFE BaHAR for N2K project, the project management procedures within the organisation were put in place following commencement of the project. The team members that would participate in the project were informed of their role in the project and included a campaign director, two marine scientists, GIS analyst, documentalist, web analyst and communications officer. A LIFE Project Coordinator was also recruited to ensure the correct implementation and reporting within Oceana, while various roles relating to the marine survey requirements were filled through temporary contracts for the 2015 and 2016 surveys.

4.1.3.5 UoM (Associated Beneficiary)

The University of Malta was represented by the Department of Biology. Although the research interests of the Department are wide-ranging, over the past decade it has developed into a centre of excellence particularly with respect to marine biology. Examples of the Department's research interests include: marine pollution and assessment of environmental quality, marine ecology, ecological assessment and monitoring, biodiversity and biogeography, fisheries biology and marine aquaculture, as well as marine conservation. Through its research programmes, the Department of Biology is generating new information about marine life, and making a direct contribution to the sustainable management of biodiversity and natural resources in the Maltese Islands.

The UoM team on the project was composed of two biology experts within the Department of Biology and two Research Support Officers (RSO) who were recruited on a part-time basis in 2014 to work on the project. The UoM-DoB team was supported by the UoM Project Support Office.

4.1.4 Changes due to amendments to the Grant Agreement

The Grant Agreement for the LIFE BaHAR for N2K project was amended twice:

- The first amendment postponed the end date of the project by one year until June 2018, and entailed shifting of all project actions by one year, with partial rescheduling of certain actions (A2 & A3) so as to ensure that the project objectives are reached.
The request for amendment was submitted in December 2015, agreed to by the Commission on 15th January 2016, and came into effect on 17th February 2016 when the Amendment was signed by the European Commission.
- The second amendment changed the Coordinating Beneficiary from MEPA to ERA, with effect from the 4th April 2016. The demerger of the MEPA constituted a change in the legal status of the Coordinating Beneficiary, apart from the change in name.

The request, submitted in July 2016, was agreed to by the Commission in August 2016, came into effect as of 4th April 2016 with the signature by the European Commission on 21st October 2016.

4.1.5 Partnership agreements

Partnership Agreements between the Coordinating Beneficiary and the individual Associated Beneficiaries were signed in June 2014, and kept updated over the course of the project to reflect changes in beneficiary names/logos as necessary.

Such agreements between project partners are required to formalise the working relationship between the Coordinating Beneficiary and Associated Beneficiaries, as well as to agree on responsibilities and administrative procedures for the lifetime of the project.

4.2 Evaluation of the management system

From a project management point of view, the main problems encountered in the project were related to the initial delays to commence, protracted process to recruit personnel for the project (in particular MESDC-DFA and MEPA project assistants), and the difficulties linked to the tender process for the multibeam surveys. These resulted in the need to postpone the end date of the project by one year and reschedule certain actions.

The above problems were addressed through discussions in the SC of the implications and of the corrective action that could be taken from a technical point of view. Issues and potential way forward were subsequently discussed in the MC from a managerial point of view. The partners demonstrated flexibility and willingness to adapt the timeframes of their actions in order to ensure that the project objectives could still be met.

There were also various changes of personnel in the course of the project. In these cases, other personnel stepped in to ensure that the work continued and the various tasks and actions were undertaken, until the position was filled again.

Continuity in the project implementation was maintained despite these changes through the key personnel from the different entities that remained on the project over the five years duration (or most of it).

4.2.1 Communication with the Commission and Monitoring Team

Five monitoring visits took place in the course of the project:

- 7th March 2014
- 16th July 2015
- 15th February 2016³
- 21st March 2017
- 20th June 2018

³ This visit was carried out together with the Commission's TDO and FDO for the project.

Following the visits, feedback was provided by the Commission regarding project implementation, and replies were formally provided by the project consortium with the subsequent project reports.

Updates on project implementation were sent to the EU Monitor at intervals in 2015, and subsequently on a monthly basis as from October 2015. Communication was also undertaken on a regular basis with the Monitor in relation to proposed deviations to the Grant Agreement and clarifications on Commission guidance documents as necessary.

5. Technical part

5.1 Technical progress per task

The project involved the collection of existing data (Action A1), collection of new data through marine surveys (A3), interpretation of data and prioritisation of important areas (A2), identification of pSCIs (A5) and of conservation objectives for each site (A7) and the designation process (A6). A GIS system was also developed (A4) and updated, and which fed into different actions in the course of the project. The identification of alternative livelihoods for stakeholders, which could potentially be impacted by the designated sites, was also carried out (A8).

The implementation of each technical action is described in the following sections; which provides an overview of overall progress made. The original timeframes, as well as the revised timeframes, as per Amendment No. 1 to the Grant Agreement (dated 17th February 2016) are also indicated. Progress vis-à-vis the timeline in the Grant Agreement is included in Figure 4.1 in Chapter 4.

The project also has a strong component of awareness raising and communication actions, which is described in Section 5.2.

5.1.1 Action A1 - Desktop Data Collection - led by MESDC-DFA

Original timeframe	4 th quarter (October) 2013 to 1 st quarter (March) 2014
Revised timeframe	4 th quarter (October) 2013 to 2 nd quarter (June) 2016
Progress made	<ul style="list-style-type: none"> • Collection of data (collection of existent secondary data, collection of GIS data) • Compilation of document repository • Manipulation of GIS data, plotting and production of maps • Adapting classifications for mapped habitat datasets through the use of EUNIS classification scheme • Collection of additional data and plotting of other useful data, mainly analysis of VMS aggregated data for the production of fishing pressure maps • Work on the harvesting of metadata • INSPIRE conformance process through MITA supplier (finalised in June 2018) • Fourteen MESDC-DFA data sets published on Malta's INSPIRE geoportal (on 11 June 2018)
Status	<p>Completed.</p> <p>Commenced October 2013. Activity Report (as at September 2015) completed in November 2015 and 2nd Activity Report -Report, including 'Threats and Pressures', covering the period October 2015 to June 2016 completed in June 2016; revised following action A2 analysis and finalised in October 2016.</p>

The tasks and deliverables pertaining to this action were in general concluded by June 2016. The existing information within the 25 nautical mile FMZ was collected, reviewed and amalgamated into a consolidated dataset; this includes habitats data as well as information on various pressures. The estimated area of the FMZ (excluding Malta's land area - 316 km²) is 11,683.20 km². Figures 5.1 and 5. 2 depict examples of the resulting maps.

However, the compilation of the metadata catalogue encountered a delay and subsequent prolonged process of making the data sets INSPIRE compliant, which lasted until the end of the project. In the case of datasets provided by third parties, some of these were still in the process of being made INSPIRE compliant by the data owners and hence the metadata and GML could not be provided.

Deliverables

- A1 GIS dataset, with EUNIS classification encoding and metadata (for A4 GIS)
- 1st Activity Report (January 2016)
- 2nd Activity Report (September 2016)

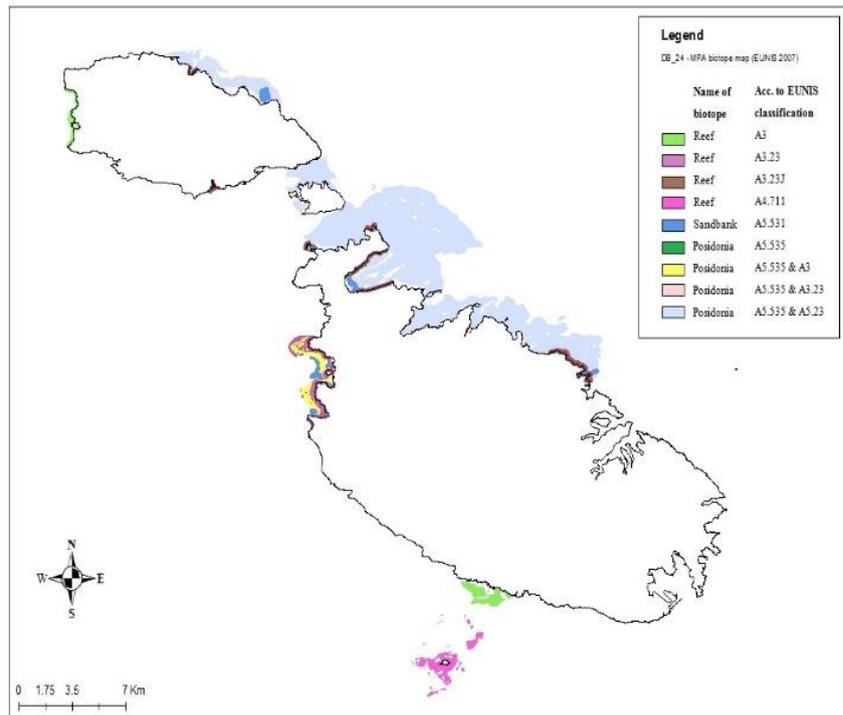


Figure 5.1: Data collected on ‘biotopes’ around the Maltese Islands⁴

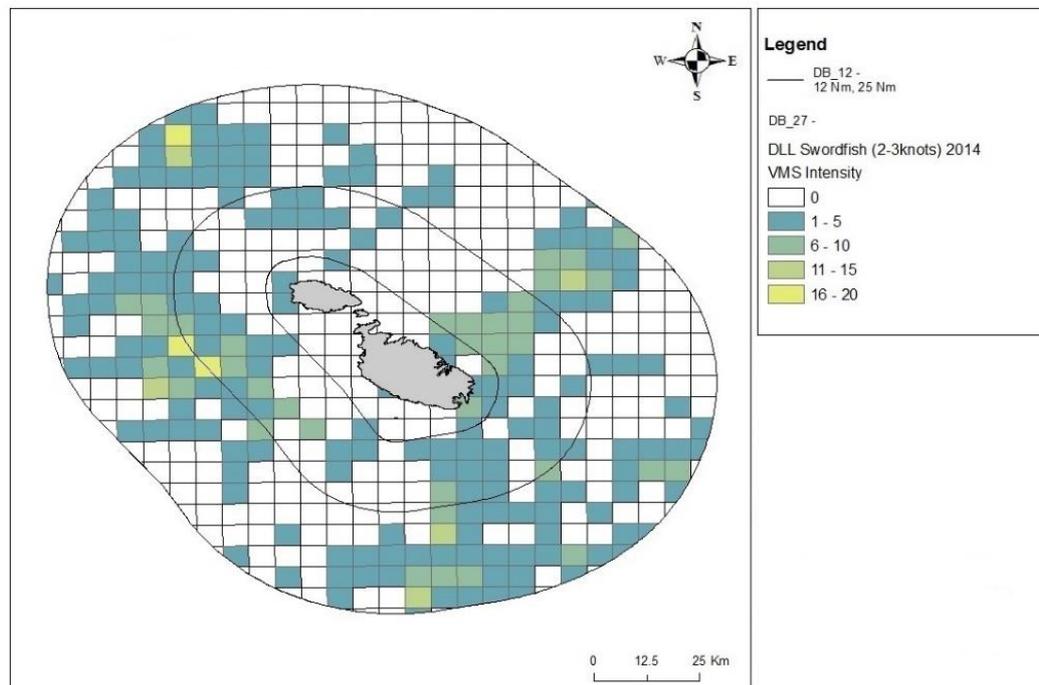


Figure 5.2: Data collected on Drifting Long Lines Swordfish (2-3 knots)⁵

⁴ This dataset was classified according to EUNIS classification codes.

⁵ VMS intensity refers to the number of points per grid square. Since most of the fishing vessels in Malta are under 12m and have no VMS, this map represents only approximately 7% of the vessels targeting swordfish.

5.1.2 Action A2 - Data Analysis and Interpretation - led by UoM-DoB

Original timeframe	4 th quarter (October) 2013 to 1 st quarter (January) 2016
Revised timeframe	4 th quarter (October) 2013 to 1 st quarter (March) 2017
Progress made	<ul style="list-style-type: none"> • Collected and supplied existing information on habitats to DFA • First analysis based on action A1 dataset, including recommendations for the first phase of action A3 and multibeam survey areas, completed in March 2015 and circulated for review and discussion by the SC (April 2015) • Preliminary analysis of 2015 action A3 survey results, including revised recommendations for multibeam survey areas, completed in September 2015, and circulated for review and discussion by the SC (September 2015). (Additional deliverable) • Second (detailed) analysis of 2015 survey results completed in March 2016 and circulated for discussion by the SC (April 2016) • Analysis of updated A1 dataset (with pressures) completed in July 2016 and finalised in August 2016 (Additional deliverable) • Preliminary analysis of multibeam draft initial results completed in September 2016 and circulated for review and discussion by the SC (October 2016). Report was finalised on 25th October 2016. (Additional deliverable) • Third analysis following second A3 surveying phase carried out and final report on the third analysis concluded in May 2017 and provided to the SC on 1st June 2017; report finalised on 1st August 2017 following discussion in the SC on 21st June 2017 • Sites containing priority areas for protection provided to ERA through the third A2 report, and support provided in relation to action A5 • Four publications related to the LIFE BaHAR for N2K project during the project duration, and presentation of findings at two international conferences
Status	<p>Concluded. Commenced October 2013; completed in August 2017. Support to other actions continued until June 2018.</p>

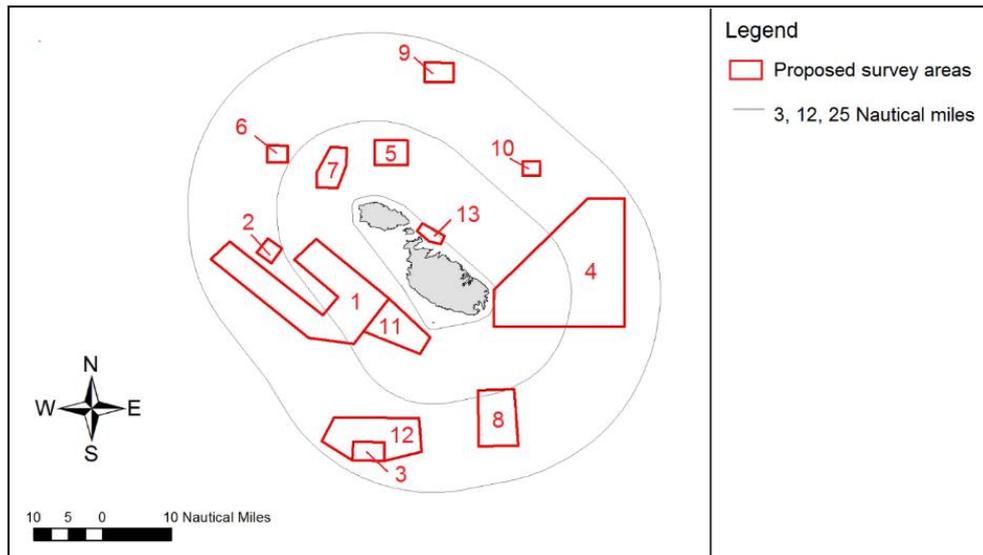


Figure 5.3: Map of the Maltese Islands showing the location of offshore areas (within the 25 NM fisheries management zone) recommended for surveying during the first action A3 surveying phase of the LIFE BaHAR for N2K project; numbers refer to order of priority (Source: Borg et al. (2015)¹²)

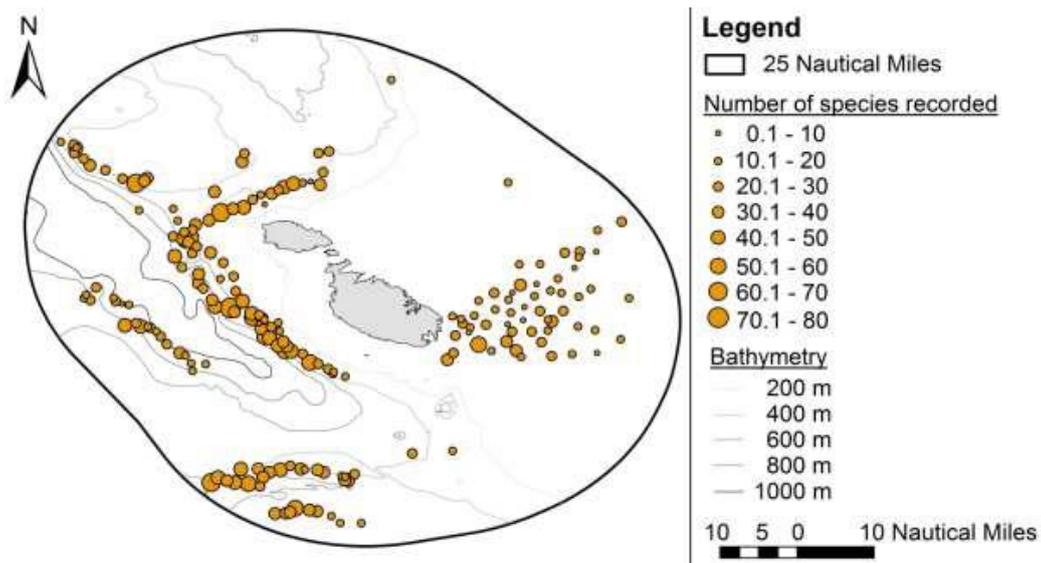


Figure 5.4: Map of the Maltese Islands showing the number of species recorded per dive from the offshore ROV dives carried out during the action A3 surveys of the LIFE BaHAR for N2K project

Deliverables

- Report on the first analysis following the first data collection exercise carried out through Action A1 (March 2015)
- Report on the second analysis following the first surveying phase carried out through Action A3 (March 2016)

- Report on the final analysis of existing data (following the data collection exercise carried out through Action A1) (July 2016)
- Report containing a preliminary analysis of the multibeam survey (September 2016)
- Report on the third analysis following the second surveying phase carried out through Action A3 (May 2017)



Figure 5.5 (left): Red coral colonies and examples of associated species at a depth of 965 m

Figure 5.5 (right): Deep sea cave recorded at 300 m depth

Other Reports

- Report on the initial analysis of findings following the 2015 marine habitat surveys carried out through Action A3 (September 2015)

Publications

- Knittweis L., Aguilar R., Alvarez H., Borg J.A., Evans J., Garcia S., Schembri P.J. (2016). New depth record of the precious red coral *Corallium rubrum* for the Mediterranean. Poster presented at the 41st Congress of the Mediterranean Science Commission (CIESM), held in Kiel, Germany on 12 - 16 September 2016
- Evans J., Aguilar R., Alvarez H., Borg J.A., Garcia S., Knittweis L., Schembri P.J. (2016). Recent evidence that the deep sea around Malta is a biodiversity hotspot. Poster presented at the 41st Congress of the Mediterranean Science Commission (CIESM), held in Kiel, Germany on 12 - 16 September 2016
- Knittweis L., Aguilar R., Alvarez H., Borg J.A., Evans J., Garcia S., Schembri P.J. (2016). New depth record of the precious red coral *Corallium rubrum* for the Mediterranean. Rapp. Comm. int. Mer Médit. 41: 463.
- Evans J., Aguilar R., Alvarez H., Borg J.A., Garcia S., Knittweis L., Schembri P.J. (2016). Recent evidence that the deep sea around Malta is a biodiversity hotspot. Rapp. Comm. int. Mer Médit. 41: 467.
- Evans J., Knittweis, L., Aguilar R., Alvarez H., Borg J. A., Garcia S., Schembri P. J. (2016). On the occurrence of *Coronaster briareus* (Echinodermata, Forcipulatida, Asteroidea) in the Mediterranean Sea. Marine Biodiversity, 1-10.

- Knittweis L., Evans J., Aguilar R., Alvarez H., Borg J.A., Garcia S., Schembri P.J. (2017). What is a 'sandbank'? A commentary based on a Maltese case study. Poster presented at the 13th International Congress on Coastal and Marine Sciences, Engineering, Management and Conservation (MEDCOAST), held in Mellieħa, Malta, on 31 October - 4 November 2017.
- Knittweis L., Evans J., Aguilar R., Alvarez H., Borg J.A., Garcia S., Schembri P.J. (2017). What is a 'sandbank'? A commentary based on a Maltese case study. In: Özhan E. (ed.) Proceedings of the thirteenth International MEDCOAST Congress on Coastal and Marine Sciences, Engineering, Management and Conservation, Malta, 31 October - 4 November 2017, p405-414.

Copies of the above publications and posters are available online via the project website <https://lifebahar.org.mt/scientific-publications/>.

Publications in press

- Knittweis L., Evans J., Aguilar R., Alvarez H., Borg J.A., Garcia S., Schembri P.J. (2018). Recent Discoveries of Extensive Cold Water Coral Assemblages in Maltese waters. In: Past, Present and Future of Mediterranean Cold-Water Corals. Springer, *in press*.

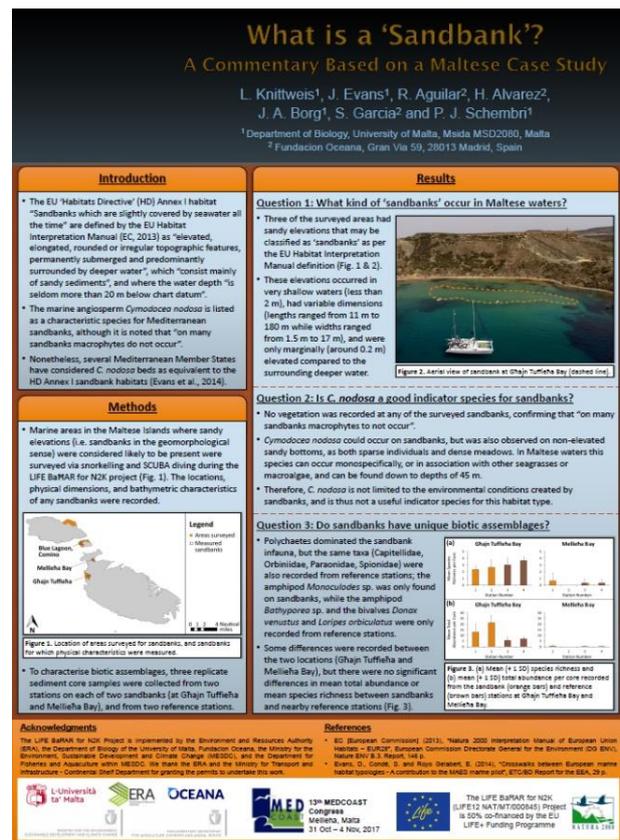
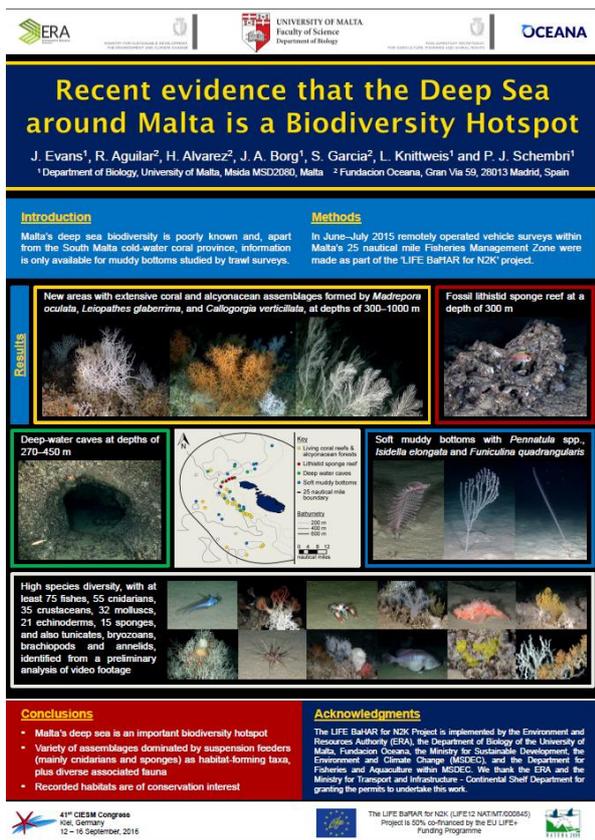


Figure 5.6 (left): Poster presented by Dr Julian Evans at the 41st Congress of the Mediterranean Science Commission (CIESM), held in Kiel, Germany on 12 - 16 September 2016

Figure 5.6 (right): Poster presented by Dr Leyla Knittweis at the 13th International Congress on Coastal and Marine Sciences, Engineering, Management and Conservation (MEDCOAST), held in Mellieħa, Malta, on 31 October - 4 November 2017

Complementary action outside LIFE

Prof. Patrick J. Schembri (UoM-DoB) delivered a presentation entitled ‘The deep sea around Malta: a biodiversity hotspot?’ at an International Union for Conservation of Nature (IUCN) Centre for Mediterranean Cooperation / Agence Française des Aires Marines Protégées (AFAMP) meeting on ‘Mediterranean Deep-Sea Ecosystems’ on 9th -10th September, 2015, which was held at the Station Marine D’Endoume - IMBE, Marseille, France.

UoM-DoB was invited to contribute a short 2-page drop article on “Recent Discoveries of Extensive Cold Water Coral Assemblages in Maltese waters” to a book which will be titled “Mediterranean Cold-Water Corals: Past, Present and Future. Understanding the Deep-Sea Realms of Coral”⁶. The book is being edited by Cova Orejas and Carlos Jimenez, and will be part of the series “Coral Reefs of the World” and is due to be published by Springer in 2019.

UoM-DoB, together with Oceana, liaised with Dr Manuel Maldonado, Head of the Sponge Bioecology and Biotechnology Group at the Department of Marine Ecology of the Centro de Estudios Avanzados de Blanes (CEAB-CSIC), who agreed to assist with sponge identifications. Sponge samples collected during action A3 surveys as well as relevant collection data were sent to Dr Manuel Maldonado in August 2017, and their identification is still in progress.

UoM-DoB researchers are currently undertaking further detailed analyses of the raw data collected via action A3, with the help of UoM-DoB students who are working on the data as part of their undergraduate or postgraduate research projects. These analyses go beyond what was required for the project as part of action A2, and once completed the results will be published in scientific literature and disseminated to the public. The outcomes of the analyses will also be directly useful for environmental assessment and management purposes, as they will provide detailed quantitative data on characteristic species and the assemblages they form part of, and on selected pressures. These data will serve to guide formulation of monitoring plans and conservation measures, as well as present the baseline data against which to compare the outcome of future monitoring efforts.

⁶ Knittweis L., Evans J., Aguilar R., Alvarez H., Borg J.A., Garcia S., Schembri P.J. (2018). Recent Discoveries of Extensive Cold Water Coral Assemblages in Maltese waters. In: Mediterranean Cold-Water Corals: Past, Present and Future. Understanding the Deep-Sea Realms of Coral. Springer, *in press*.

5.1.3 Action A3 - Marine Habitat Surveys - led by Fundación Oceana

Original timeframe	2 nd quarter 2014 to 3 rd quarter 2015
Revised timeframe	4 th quarter 2013 to 4 th quarter 2016
Progress made	<ul style="list-style-type: none"> • First expedition of marine surveys with ROV and SCUBA carried out in June and July 2015, and preliminary analysis completed in February 2016 • Second expedition of marine surveys with ROV and SCUBA carried out between May - July 2016, and preliminary analysis completed in April 2017 • Bathymetric survey with Multibeam Echosounder and sediment sampling carried out between 28th July 2016 and 28th August 2016 • Review of data and reports from the Multibeam Echosounder survey and sediment sampling completed in November 2016 • Online data viewer completed and published online on 24th May 2018 through LIFE BaHAR website • INSPIRE compliance of habitat survey GIS data sets checked and approved in August 2018
Status	<p>Completed. Commenced in October 2013; was completed by April 2017. Online data viewer made public in May 2018. Support to other actions continued until June 2018.</p>

The overall timeframe for this action was extended from March 2016 to December 2016 through the amendment to the GA. An extension was required in view of the delays in commencement of the project, which in turn delayed the start of actions A1 and A2 on which the marine surveys (A3) were dependant, as well as delays linked to the tender for seafloor mapping and characterisation. Preliminary analysis of the survey data took longer than foreseen, due both to the quantity of footage collected as well as delays in the MBES survey and associated shift in data submission and analysis timeframes, so that action A3 was subsequently concluded in April 2017. This was compensated by shifting/extending the timeframes for action A2 and reducing that of action A5.

The area surveyed by Oceana using ROV and scientific diving were: 290,108 m² (offshore areas) and 443,849 m² (inshore areas). A total of 1,300 km² were surveyed by Multibeam Echosounder.

2015 & 2016 Oceana Surveys

- The following permits were issued for the surveys:
 - Permit for Marine Scientific Research - issued by the Continental Shelf Department within the Ministry for Transport and Infrastructure;
 - Nature Permit (Permit to carry out a research survey in selected marine Special Areas of Conservation, and for the collection of protected species for identification from Maltese waters) - issued by MEPA (2015) / ERA (2016);
 - Clearance from the Superintendence of Cultural Heritage, subject to a set of conditions;
 - A Notice to Mariners regarding the surveys was issued by Transport Malta prior to the start of each survey.

- Oceana’s first expedition commenced on the 1st June 2015 and ended on the 23rd July 2015.
- Underwater video footage was recorded from 94 ROV transects along the Maltese seabed, down to a maximum depth of approximately 1000 m, and by 12 SCUBA dives along Malta’s inshore waters.
- The expedition generated:
 - 110 hours of ROV footage
 - 2400 screenshots from ROV transects
 - 921 SCUBA videos
 - 665 SCUBA pictures
- 281.7 km² were surveyed in 2015: 231.81km² (offshore areas) and 49.89 km² (inshore areas).



Figure 5.7: Divers surveying a submerged marine cave (2016)



Figure 5.8: Deploying the ROV

- The 2016 survey expedition commenced on 26th May 2016 and was concluded on 31st July 2016 (excluding transits).
- Underwater video footage was recorded from 112 transects along the Maltese seabed, down to a maximum depth of approximately 1000 m, and through 30 SCUBA dives along Malta’s inshore waters.



Figure 5.9: ROV frame of Deep-sea coral (*Madrepora oculata*) and crinoids (*Leptometra phalangium*)

- The areas designated for cave and sandbank identification were surveyed by a professional team of four SCUBA divers, two of them equipped with underwater photo and video cameras and of two of them as security divers.
- Compared to 2015, the number of SCUBA dives increased from 12 to 30 in 2016, because of the need to completely survey all the eight inshore areas identified through action A2. The use of scooters resulted in completion of close to 100% of the proposed inshore areas, by increasing distances covered at every dive.
- The expedition involved 112 ROV transects and 30 SCUBA dives, and generated:
 - 200 hours of ROV footage
 - 2,900 screenshots from ROV transects
 - 1,500 SCUBA videos
 - 1,500 SCUBA pictures
- 2420.19km² were surveyed in 2016: 2404.70km² (offshore areas) and 15.49km² (inshore areas).

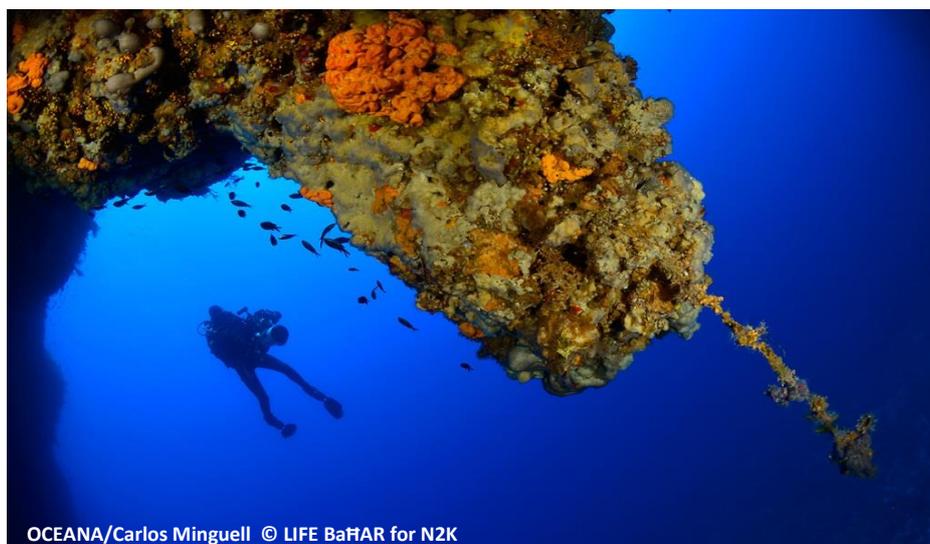


Figure 5.10: Diver surveying a reef (2016)

- For both the 2015 and 2016 expeditions, a Saab Seaeye Falcon DR ROV was used for image recording with ROV at offshore areas, equipped with a High Definition Video (HDV) camera of 480 TVL with Minimum Scene Illumination 2.0 LUX (F1.4), Pick Up Device ½” CCD, Image Sensor, and spherical ½ of 3.8 mm and wide-angle lenses.
- During ROV transects, the *Oceana Ranger* sailed at an average speed of 0.2 knots, filming both in HD and low resolution, and simultaneously recording position, depth, course and time.
- In view that bathymetric data was not available for the surveys, Oceana made use of the *Ranger*'s sounder to find and survey elevations to identify the most relevant survey areas. Hence, the lack of bathymetry data did not impede the carrying out of the detailed surveys, since the vessel's sounder was sufficient for this purpose. However, the resolution of this sounder is not comparable with that of the Multibeam, which gives detail of the sea bed.
- Video analysis was carried out after both expeditions, and the sightings data mapped on GIS and provided to UoM-DoB for interpretation through action A2.

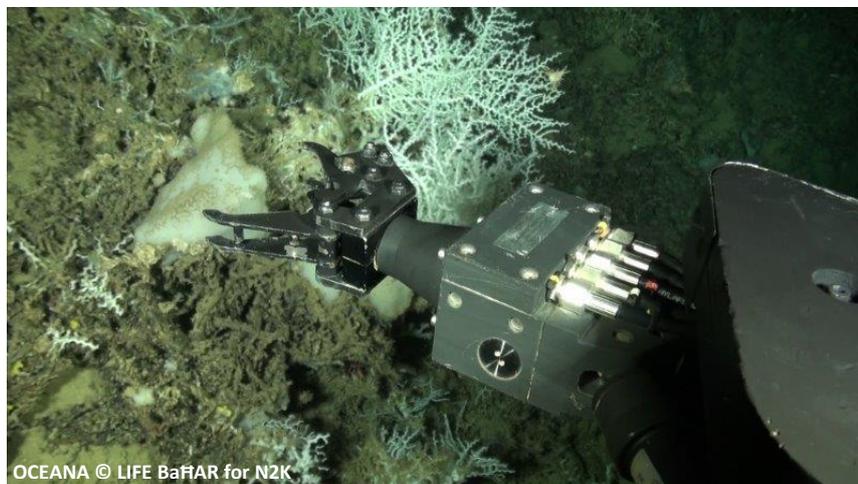


Figure 5.11: ROV taking samples

Multibeam Echosounder and sediment sampling surveys

- The procurement process for the Multibeam contract commenced in September 2013, and was eventually published in March 2015. Apart from the timeframes associated with the public procurement process, which are quite lengthy, there were delays as a result of changes to the Public Procurement Regulations (that required significant redrafting), as well changes subsequently required due to the change in survey timeframes.
 - The tender was not successfully awarded because all the technically compliant bids exceeded the allocated budget and the call was subsequently cancelled following closure of the appeals period on 26th October 2015.
 - A new tender was re-issued in December 2015, which was updated to reflect the new data collected during the 2015 A3 surveys undertaken by Oceana. The call closed on 26th January 2016 with 14 bids received.
- The tender was awarded in May 2016. Following submission of the permit applications in June, the necessary permits for the survey were issued by CSD, ERA Nature Permitting and the Superintendence of Cultural Heritage in the first week of July 2016.
- The Campaign Strategy was approved by the SC on 27th June 2016.
- The contractor Geomara commenced mobilisation on 11th July 2016, with travel of key experts and shipment of the multibeam echosounder to Malta. Commencement was

subsequently delayed with respect to the agreed Campaign Strategy due to technical and logistical issues linked with mobilisation.

- The dedicated research vessel ‘RV Hercules’ was fitted with a hull-mounted Kongsberg 710 multibeam echosounder, and mobilised on the 27th July 2016 from the Manoel Island Yacht Yard. All sensor offsets were measured and verified, and the system was then trialled and calibrated at sea on the 28th July 2016, prior to the commencement of the survey.



Figure 5.12: Multibeam Echosounder mounted on vessel’s hull

- The multibeam surveys were carried out between the 28th July and the 17th August 2016.
- Preliminary reports (draft colour shaded relief maps and backscatter maps) were received between the 3rd and 21st August 2016.
- Limitations in certain areas were indicated due to the presence of munitions dump sites.
- During the last 10 days in August, sediment sampling was carried out at 50 stations in accordance with a sampling plan agreed to by the contractor, ERA and UoM-DoB, and cleared by the SCH. Sampling commenced on the 20th August 2016 and was concluded on the 28th August 2016. Operations were halted between the 22nd and 26th August due to weather conditions.
- Sieved sediment samples (including biota, as well as an unsieved sample per station) were delivered in August 2016 and the sediment samples to be analysed for granulometry and Total Organic Carbon were dispatched by the contractor to the respective laboratories for analysis.
- The various deliverables were submitted and reviewed between September and November, with all reports and mapped data approved in December 2016.

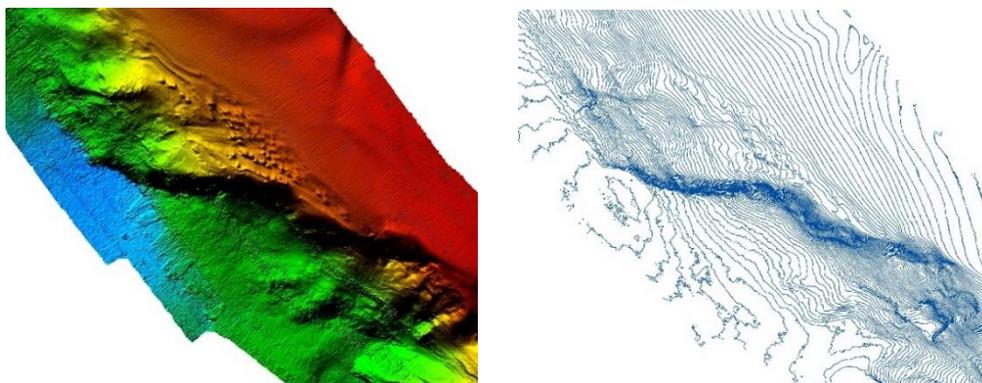


Figure 5.13: Detail of sea floor bathymetry mapped as a colour shaded relief map and as plot contours
(© LIFE BaHAR for N2K)

Data Viewer

Following completion of the 2016 expedition and data analysis/mapping, Oceana commenced work on interactive maps with expedition results in August 2017. The data collected through the surveys is displayed in a public online data viewer, which was launched in May 2018 on the LIFE BaHAR website:

<https://oceana.maps.arcgis.com/apps/MapSeries/index.html?appid=6b6c687101b841588dc91b84d3a25ef3>

The viewer, which can be accessed through the project website's home page, includes information on the project findings, as well as maps of the key habitats, distribution of sightings of species of conservation interest⁷ and of species of commercial importance, and marine litter as observed during the project surveys.

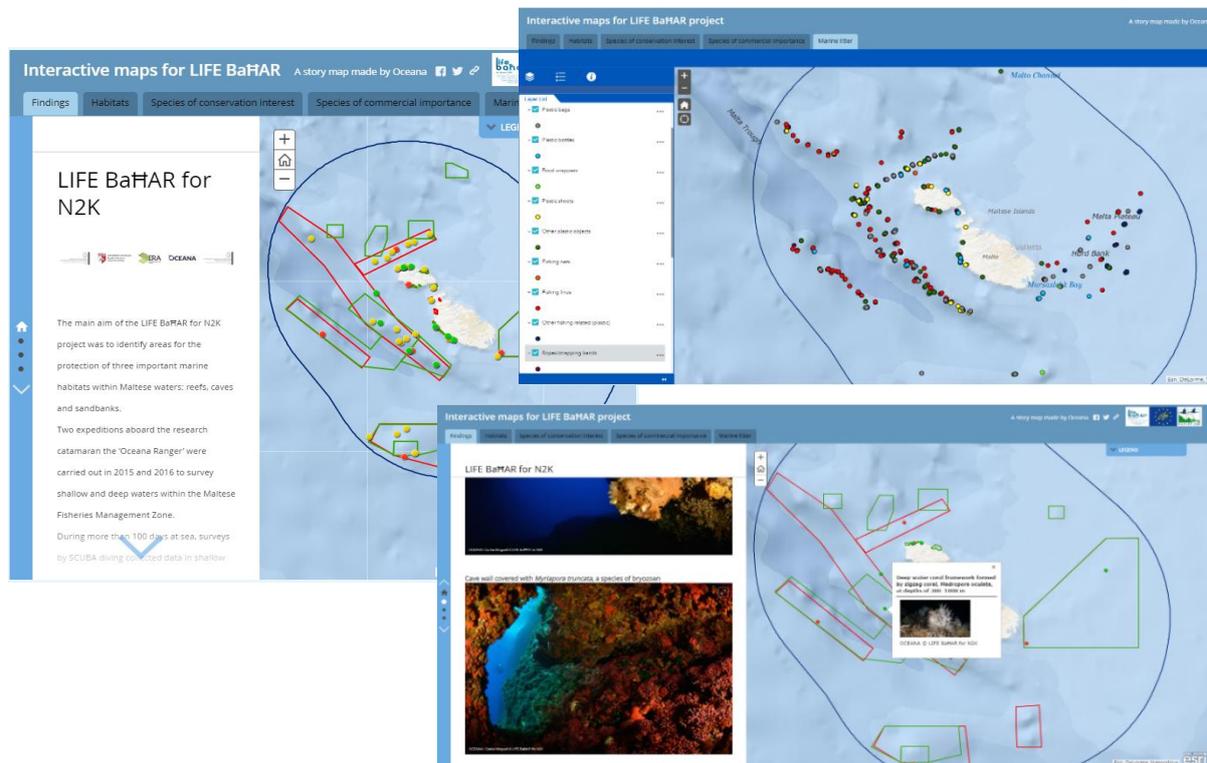


Figure 5.14: Screenshots of online viewer showing project results

Deliverables

- Underwater photographs, videos and documentation about all immersions carried out (depths, duration, details etc.)
- Raw and processed data from the Multibeam survey
- Reports
 - Report of 1st Expedition - Action A3: Marine Habitat Surveys (October 2015)
 - Report of 2nd expedition - Action A3: Marine Habitat Surveys (August 2016 Revised October 2016)

⁷ The Habitats Directive, SPA/BD Protocol (Annex II & III) under the Barcelona Convention, and the IUCN Red List refer in relation to species of conservation interest.

- Reports documenting the Multibeam bathymetric and seabed surveys
 - Initial Results Report Vol. 1 - Bathymetric Survey
 - Initial Results Report Vol. 2 - Sediment Sampling
 - Descriptive report and Supplemental Reports

Complementary action outside LIFE

Fundación Oceana organised an event at the Excelsior Hotel on the 17th of July 2015, with the aim of sharing insights with Commissioner Vella about the organisation’s campaign work to protect European seas. The main focus was on Oceana’s current research surveys of deep-sea areas and underwater caves in Maltese waters, as part of the LIFE BaĦAR for N2K project. The research catamaran the *Oceana Ranger* was moored at the hotel harbour and Commissioner Vella, as well as the other attendees, were invited to go on board to learn about how the underwater research is being carried out.

5.1.4 Action A4 - GIS Development and Implementation - led by MEPA/ERA

Original timeframe	4 th quarter 2013 to 4 th quarter 2016
Revised timeframe	4 th quarter 2013 to 2 nd quarter 2018
Progress made	<ul style="list-style-type: none"> • GIS maps of key habitats, species and litter distribution produced through action A2 (UoM-DoB) • GIS maps of all A3 preliminary data produced (species distribution, marine litter sightings, survey logistics), together with related metadata and metadata for A2 maps (Oceana) • Encoding of EUNIS for A2 habitat type dataset (MESDC-DFA & UoM-DoB) • Final comprehensive GIS shapefiles of target benthic habitats (sea caves, reefs), habitat type, and habitat-forming species, on the basis of A2 and A3 data as well as A1 bathymetric data (ERA) • Map of pSCI boundaries for action A5/A6 (ERA) • Harmonisation of final habitat maps and MPA map in INSPIRE compliant format (ERA - external expertise) • Harmonisation in INSPIRE compliant format of A3 data (where applicable) as well as production of metadata and harmonisation of key A2 outputs (Oceana) • Integration of project data and key A1 data into one geodatabase and production of Arc Map document with relevant map layouts (ERA)
Status	<p>Completed.</p> <p>Commenced in March 2014; GIS layers and their attributes were finalised by June 2018.</p> <p>Harmonisation in INSPIRE compliant format and integration of all key project data into one WGS84 geodatabase flowed into Q3 2018.</p>

Deliverables

- A4 geodatabase with relevant attribute information
- Final document with all relevant map layouts
- INSPIRE compliant datasets (GMLs in ETRS projection)

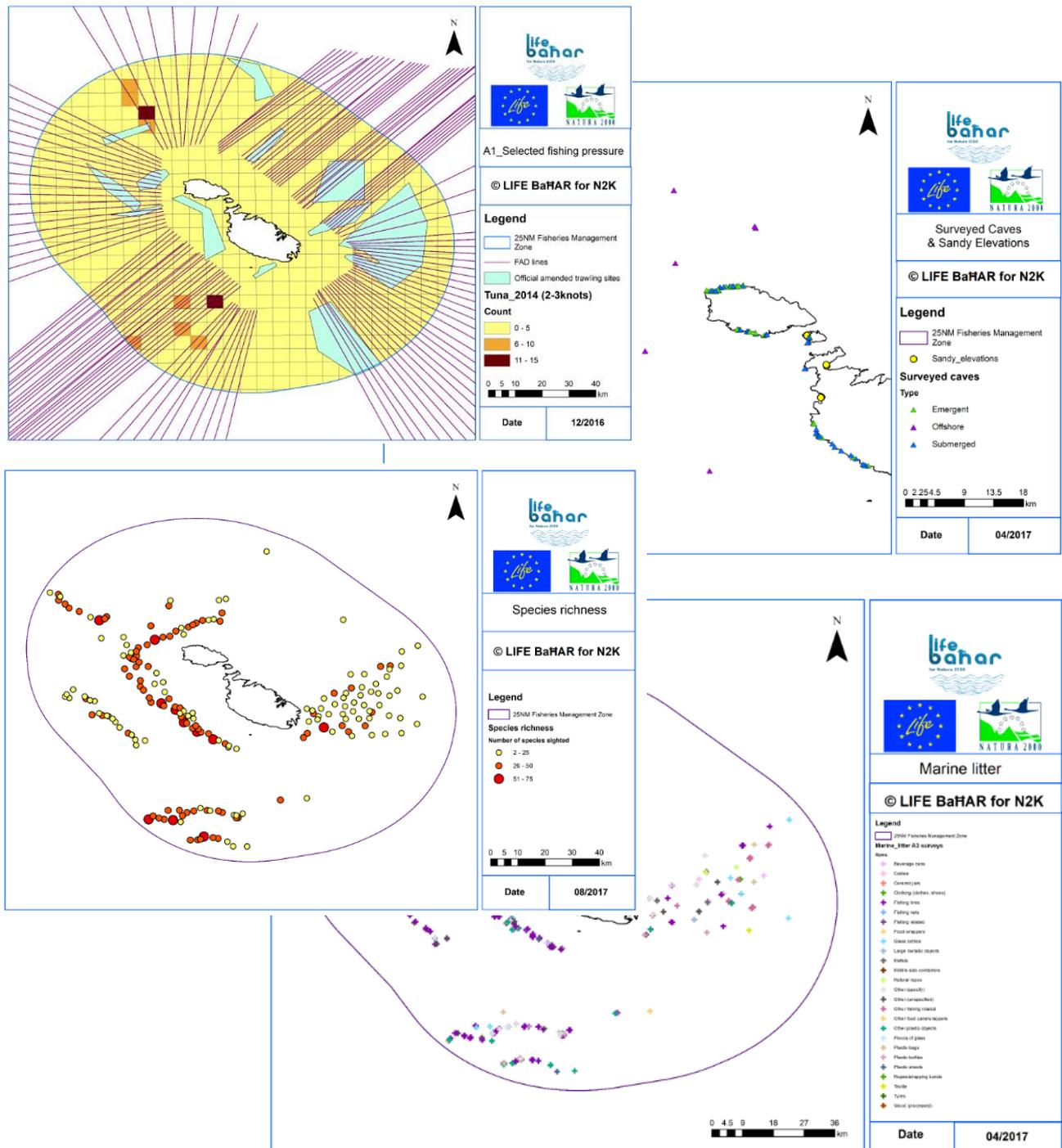


Figure 5.15: Some of the final maps showing project results: (clockwise from top left) Selected fishing pressures; Surveyed caves and sandy elevations; Marine litter; Species richness

5.1.5 Action A5 - Identification of proposed Sites of Community Importance - led by MEPA/ERA

Original timeframe	4 th quarter 2013 to 2 nd quarter 2016
Revised timeframe	1 st quarter 2014 to 3 rd quarter 2017
Progress made	<ul style="list-style-type: none"> • Three inshore and five offshore areas identified for the protection of reefs and sea caves, on the basis of project data (habitats, key species, bathymetric/seabed data) and in consideration of the site boundaries of existing MPAs • pSCIs presented to ERA Board and approved in September 2017 • List of pSCIs sent formally to MESDC on 30th November 2017 for endorsement and presentation to Cabinet • SDFs finalised in database format in April 2018 and uploaded on 1st June 2018
Status	Completed. Commenced in February 2014; completed in May 2018

- Three inshore and five offshore areas, which are important for reefs and sea caves, were identified as pSCIs. These sites were selected based on (i) the species they host which are typical of reefs, (ii) the habitats consisting of escarpments that form of reefs; (iii) sheer vertical cliffs forming reefs along the coast; and (iv) a number of sea caves.
- The sites took into consideration the pSCIs previously identified through the LIFE+ Migrate and LIFE+ Malta Seabirds projects; in three cases, the priority areas identified through action A5 were included as extensions to these sites, in view of overlapping areas. In the case of the inshore sites, these were all considered as extensions to the existing pSCIs.
- The coastal areas identified encompass a range of coastal caves and reefs. Various species of conservation interest inhabit these sites, such as the star coral *Astroides calycularis*, the long-spined sea urchin, *Centrostephanus longispinus* and the Mediterranean slipper lobster, *Scyllarides latus*.
- All the offshore sites were chosen based on the presence of reef structures and offshore caves in deep waters. The offshore reefs include extensive and diverse communities of cold water corals, such as the black coral *Leiopathes glaberrima*, the zig zag coral *Madrepora oculata* and the stony coral *Lophelia pertusa*, as well as communities formed by gorgonians, in particular *Callogorgia verticillata*. Other species of conservation interest, such as the bamboo coral *Isidella elongata* and the tall sea pen *Funiculina quadrangularis*, were often observed within certain sites, particularly on flat plains at the foot of the escarpments.
- No new sites were identified for habitat 1110 (sandbanks) in view that in 2016 sufficiency for this habitat was confirmed as achieved (in 2010 with the designation of coastal sites); in any case all the sandy elevations found are within the existing SCIs.
- The list of pSCIs was sent formally to MESDC on 30th November 2017 for endorsement and presentation to Cabinet (through action A6).
- The additional 8 pSCIs identified through action A5 (and subsequently designated through action A6) increased the overall coverage of marine protected areas by over 700 km² compared to 2016.
- A total of 148 sea caves, of which 131 are inshore caves and 17 newly discovered offshore caves are now covered by the extended and newly designated sites. The overall protection of

reef areas has increased by over 100 km² compared to previously existing sites hosting reefs, leading to a total of 107.63 km².

Deliverables

- List of pSCIs (Figure 5.16 refers)

The names of existing pSCIs were changed to better reflect the geographical scope of the extended sites, while in the case of the offshore sites this was required since the SPA boundaries were left unchanged, while the extended pSCIs were given a new name.

- The SDFs in pdf and database format are available online:
<https://era.org.mt/en/Pages/Natura-2000-Datasheets-Maps.aspx>
<http://cdr.eionet.europa.eu/mt/eu/n2000/envwxfqzw/>

Updated list of pSCIs proposed through action A5

- 1) Inshore I as an extension of MT0000105 - Żona fil-Baħar bejn Il-Ponta ta' San Dimitri (Għawdex) u Il-Qaliet
- 2) Inshore II as an extension of MT0000101 - Żona fil-Baħar bejn Rdum Majjiesa u Għar Lapsi
- 3) Inshore III as an extension of MT0000104 - Żona fil-Baħar bejn Il-Ponta tal-Ħotba u Tal-Fessej (Għawdex)
- 4) Offshore I as an extension of MT0000110 - Żona fil-Baħar fl-inħawi tal-Graben ta' Medina (MT0000116)
- 5) Offshore II as an extension of MT0000113 - Żona fil-Baħar fil-Punent
- 6) Offshore III as a novel site - Żona fil-Baħar fl-inħawi tal-Punent tal-Graben ta' Malta (MT0000117)
- 7) Offshore IV as an extension of MT0000106 - Żona fil-Baħar fl-inħawi tal-Graben tat-Tramuntana ta' Għawdex (MT0000115)
- 8) Offshore V as a novel site - Żona fil-Baħar fl-inħawi tal-Majjistral tal-Graben ta' Malta (MT0000118)

Notes

1. MT0000115: An extensive area of this site was initially proposed as an SCI in 2016 (MT0000106), together with an SPA; following an extension in 2018 of the SCI (confirmed in 2017), MT0000106 was retained as an SPA, while the SCI with the extended area given the site code MT0000115

2. MT0000116: An extensive area of this site was initially proposed as an SCI in 2016 (MT0000110), together with an SPA; following an extension in 2018 of the SCI (confirmed in 2017), MT0000110 was retained as an SPA, while the SCI with the extended area given the site code MT0000116

Figure 5.16: List of pSCIs proposed through action A5

5.1.6 Action A6 - Designation Process for proposed Sites of Community Importance - led by MESDC

Original timeframe	3 rd quarter 2016 to 4 th quarter 2016
Revised timeframe	4 th quarter 2017 to 2 nd quarter 2018
Progress made	<ul style="list-style-type: none"> • List of pSCIs presented to Cabinet, and approved, on 6th February 2018 • Government Notice published on 5th June 2018 • Official announcement of new sites by Hon. Dr José Herrera, Minister for the Environment, Sustainable Development and Climate Change during the LIFE BaHAR closing conference on 5th June 2018 • Letter indicating submission sent to the European Commission on 15th June 2018 • Three new inshore sites and five offshore areas declared for the protection of marine caves and reefs • Sites declared through the project led to an additional 700 km² of additional marine area being proposed for inclusion in the Natura 2000 network
Status	Completed. Commenced in February 2018 and was completed in June 2018.

- Three new inshore sites (extensions to existing coastal SCIs) were declared for the protection of reefs and sea caves.
- Five offshore areas were declared for the protection of reefs and sea caves- two completely new sites and three extensions to existing offshore pSCIs.
- Sites declared through the project led to an additional 700 km² of additional marine areas being proposed for inclusion in the Natura 2000 network.
- In practice, the area being protected for these habitats is greater, since there was a partial overlap with pSCIs previously declared through the LIFE+ Migrate project for the loggerhead turtle and bottlenose dolphin (hence already a protected area, but not previously designated for benthic habitats).

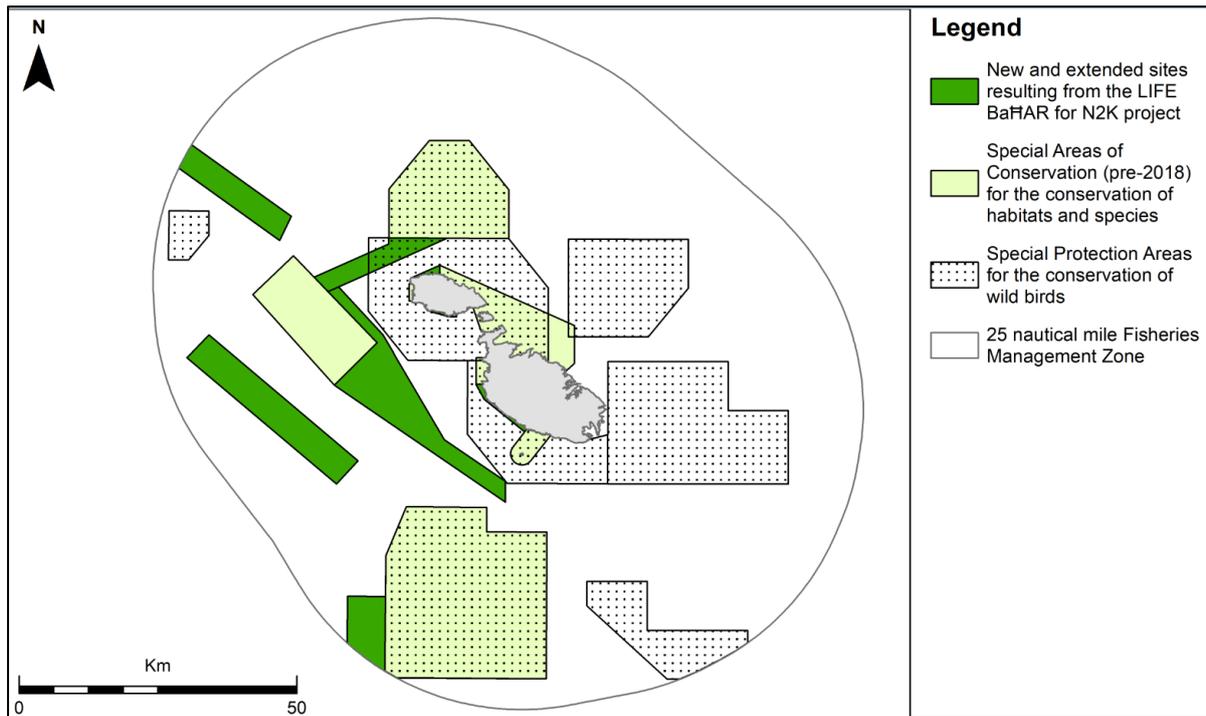


Figure 5.17: New and extended sites proposed through action A5 and designated through action A6 of the project.

Deliverables

- The Biotope Maps of the approved pSCIs designated through the project (Figures 5.18 and 5.19)
- The Standard Data forms (SDFs) and link to the online database (as described in action A5)

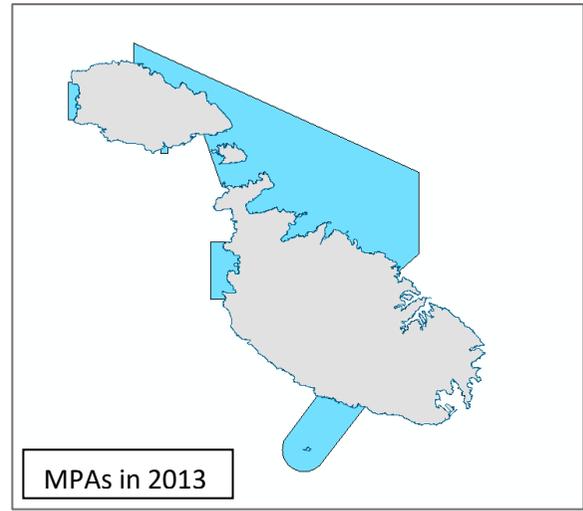
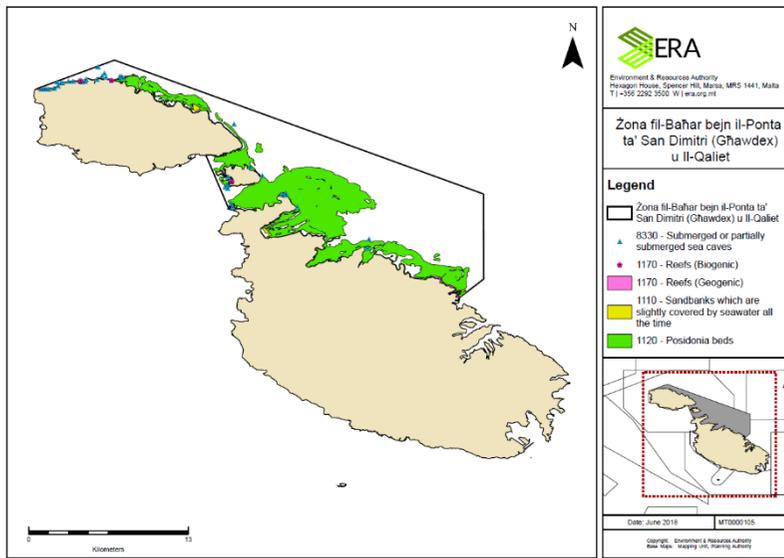
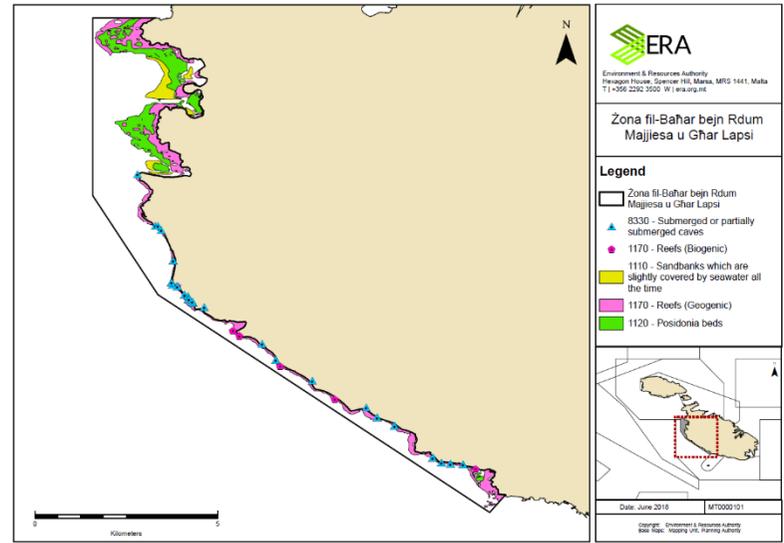
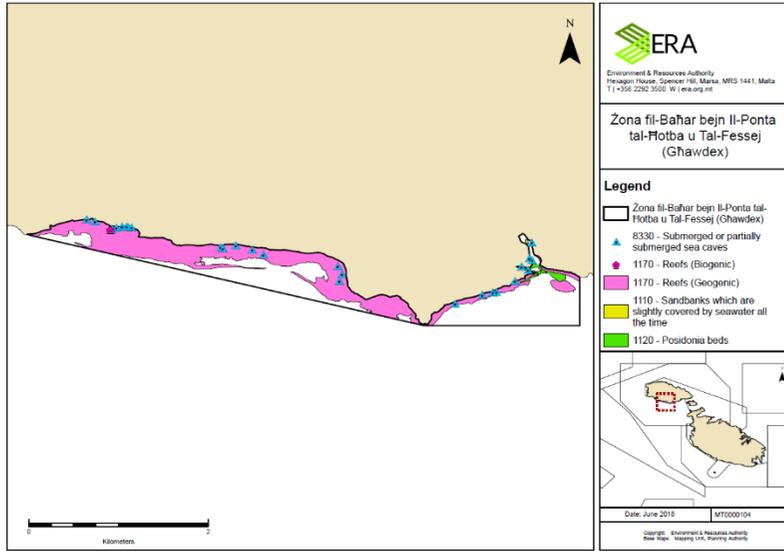


Figure 5.18: Biotope maps of the three inshore sites, as extended through the-project (in 2018), and MPA boundaries pre-project (in 2013)

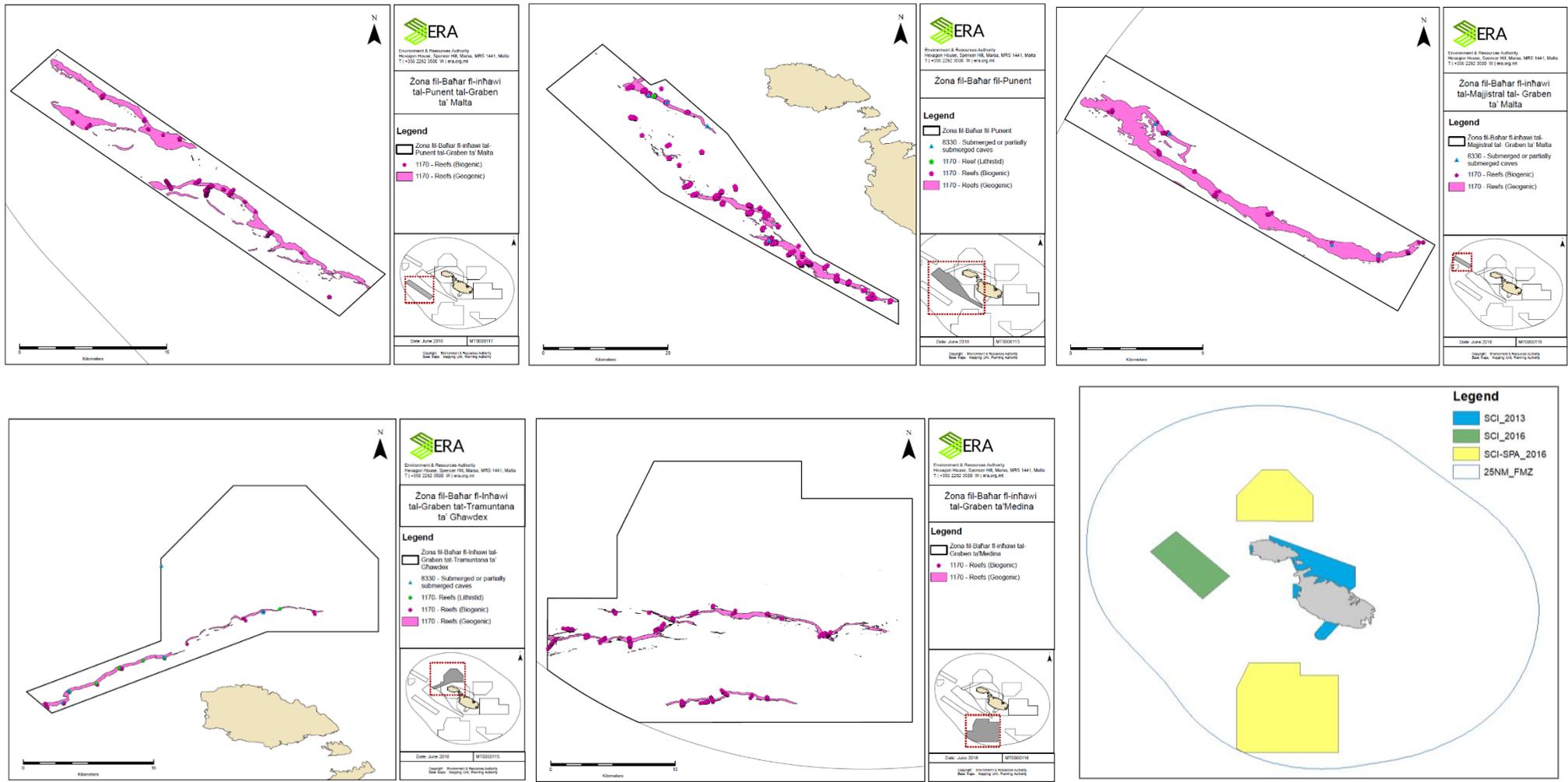


Figure 5.19: Biotope maps of the five offshore sites, as designed or extended through the project in 2018, and the MPA boundaries under the HD in 2013 and 2016

5.1.7 Action A7 - Identification of conservation objectives for each of the Designated Sites - led by ERA

Original timeframe	3 rd quarter 2016 to 4 th quarter 2016
Revised timeframe	2 nd quarter 2017 to 1 st quarter 2018
Progress made	<ul style="list-style-type: none"> • Meeting on conservation objectives (COs) held with stakeholders held in November 2017 (action E4) • COs developed and discussed in internal meetings in Q1 2018, and partners consulted in April 2018 • Finalised COs presented to, and approved by, ERA Board in May 2018 • Document on COs designed, finalised and uploaded on the project website on 28th June 2018
Status	Completed. Commenced in September 2017 and was completed in June 2018

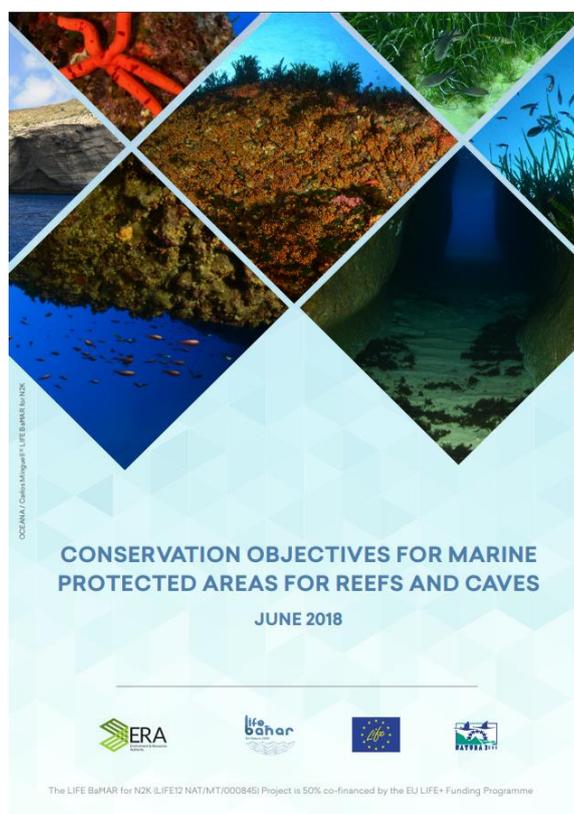


Figure 5.20: Cover page of the final conservation objectives document

Deliverables

- The list of conservation objectives in Management Plan format (CO document) is available online:
https://lifebahar.org.mt/wp-content/uploads/2018/06/Conservation-Objectives_Habitats-MPAs.pdf

5.1.8 Action A8 - Identification of Diversification of Tasks for Stakeholders being impacted by the Designated Sites - led by MESDC-DFA

Original timeframe	3 rd quarter 2016 to 2 nd quarter (June) 2017
Revised timeframe	2 nd quarter 2017 to 2 nd quarter (June) 2018
Progress made	<ul style="list-style-type: none"> • Procurement process commenced in Q1 2017 and concluded with contract signature in November 2017 • 3 meetings held between ERA, DFA & contractor (December, April, May) • Introductory meeting with stakeholders on 24th January 2018 • Face-to-face interviews carried out with 17 stakeholders in February/March 2018 • Meeting held with stakeholders on 7th May 2018 to present the outcomes of face-to-face interviews and discussions with stakeholders • Training course for economic operators (fishers and divers) held between 21st May and 1st June 2018 • Recommendations on best practice were circulated to the partners on 15th June 2018; the poster in Maltese and English was produced by 4th June and presented at the closing event on 5th June • Draft livelihood analysis report and draft technical report (summarising activities of action A8) were circulated among the partners in June 2018 • Final reports on stakeholder interviews and activity report on recommendations for best practice and alternative livelihood options were provided to the partners on 2nd July 2018
Status	Completed Commenced in January 2017 and was completed in June/July 2018



Figure 5.21: Presentation to the stakeholders on the interview outcomes (© LIFE BaHAR forN2K)

Deliverables

- Review Report - Outcomes and Analysis of Interviews with Stakeholders Review Report
- Activity Report - Livelihood Analysis and Guidance Document
- Poster on recommendations for best practice - PDFs of poster in Maltese and in English, and photos of the printed posters.

5.1.9 Action F1 - Project Management - led by MEPA/ERA

Original timeframe	4 th quarter (October) 2013 to 2 nd quarter (June) 2017
Revised timeframe	4 th quarter (October) 2013 to 2 nd quarter (June) 2018
Progress made	<ul style="list-style-type: none"> • Four reports submitted until June 2018: <ul style="list-style-type: none"> - Inception Report (submitted December 2014) - Progress Report (submitted October 2015) - Mid-term Report (submitted December 2016) - Progress Report (II) (submitted December 2017) • Procurement of equipment (3 laptops, printer, external hard drives) • Recruitment of Project Assistant (June 2015), with replacement recruited in November 2016 • GA amended twice: <ul style="list-style-type: none"> - Postponement of end date by one year, and associated rescheduling of actions to achieve project objectives (February 2016) - Change in Coordinating Beneficiary from MEPA to ERA (April 2016) • 13 meetings of the SC and 7 meetings of the MC held • Final Report drafted (Q3 2018)
Status	Commenced in October 2013; completed in June 2018 Final Report drafted in August/September 2018 and finalised in October 2018

5.1.10 Action F2 - Project Monitoring - led by MEPA/ERA

Original timeframe	4 th quarter (October) 2013 to 2 nd quarter (June) 2017
Revised timeframe	4 th quarter (October) 2013 to 2 nd quarter (June) 2018
Progress made	<ul style="list-style-type: none"> • Submission in April 2016 of project indicators status prior to start of the project, following request by Commission as part of Mid-term evaluation of LIFE Regulation 2014-2020 • Regular submission of timesheets (monthly) • Regular submission of updated cost statements by partners (quarterly) • Monthly reporting to the EU Monitor • Updating of SAGE accounting system • 5 monitoring visits, including one by the Commission Technical Desk Officer and Financial Desk Officer • Logging of key events (meetings, deliverables submission, etc.) and communication for record purposes • Consolidation of quarterly and final cost statement
Status	Completed Commenced in October 2013 and completed in June 2018

5.1.11 Action F3 - Networking with other projects - led by MEPA/ERA

Original timeframe	4 th quarter (October) 2013 to 2 nd quarter (June) 2017
Revised timeframe	4 th quarter (October) 2013 to 2 nd quarter (June) 2018
Progress made	<ul style="list-style-type: none"> • 3 meetings held with BirdLife Malta on the LIFE+ Seabird Malta project and project team of the LIFE+ Migrate project between 2013-2016 • Several networking events attended • Travel to three meetings abroad and attendance to international conference held in Malta <ul style="list-style-type: none"> - LIFE Kick-off Meeting (Copenhagen, October 2013) - LIFE Marine Platform Meeting (Madrid, March 2015) - PANACeA knowledge-sharing event (Barcelona, October 2017) - MEDCOAST congress (Malta, October 2017) • Exchange of information facilitated (data of project, images, etc.)
Status	Completed Commenced in February 2014 and completed in April 2018

5.1.12 Action F4 - Independent financial audit - led by MEPA/ERA

Established timeframe	4 th quarter (October) 2016 to 3 rd quarter (September) 2017
Revised Timeframe	2 nd quarter (May) 2014 to 3 rd quarter (September) 2018
Progress made	<ul style="list-style-type: none"> • Procurement carried out in 2016, through a Call for Quotations, and contract awarded to Nexia BT (Official firm registration number: AB/26/84/61) • Contract and non-disclosure agreement signed in December 2016 • Interim audit conducted in March 2017, with interim report received in May and finalised in early July 2017 • Final audit carried out in August 2018 • Report received in September 2018 • Signed report issued 18th October 2018
Status	Completed Commenced in March 2017 and concluded in October 2018

Deliverables

- Independent Audit Report - submitted with the Final Report

5.1.13 Action F5 -- After-LIFE Conservation Plan - led by ERA

Original timeframe	4 th quarter (October) 2016 to 3 rd quarter (September) 2017
Revised Timeframe	4 th quarter (October) 2017 to 3 rd quarter (September) 2018
Progress made	<ul style="list-style-type: none"> • Drafting commenced in September 2017 • Measures were developed in consultation with the partners between June and September 2018 • The After-LIFE Plan with the final set of measures was circulated to the partners in September 2018
Status	Completed Commenced in September 2017 and completed in September 2018

The After-LIFE Plan constitutes an approved exit strategy for the management of the Maltese Marine Natura 2000 sites, and details the following steps/sections:

- an outline of the general situation for Marine Natura 2000 sites in Malta;
- the Principles for guiding the establishment of conservation objectives;
- identifying Conservation priorities;
- actions to implement interim measures (application of project funds, involvement of NGOs, fishing and diving sectors, etc.);
- monitoring and data collection
- potential sources of funding for sustainable financing.

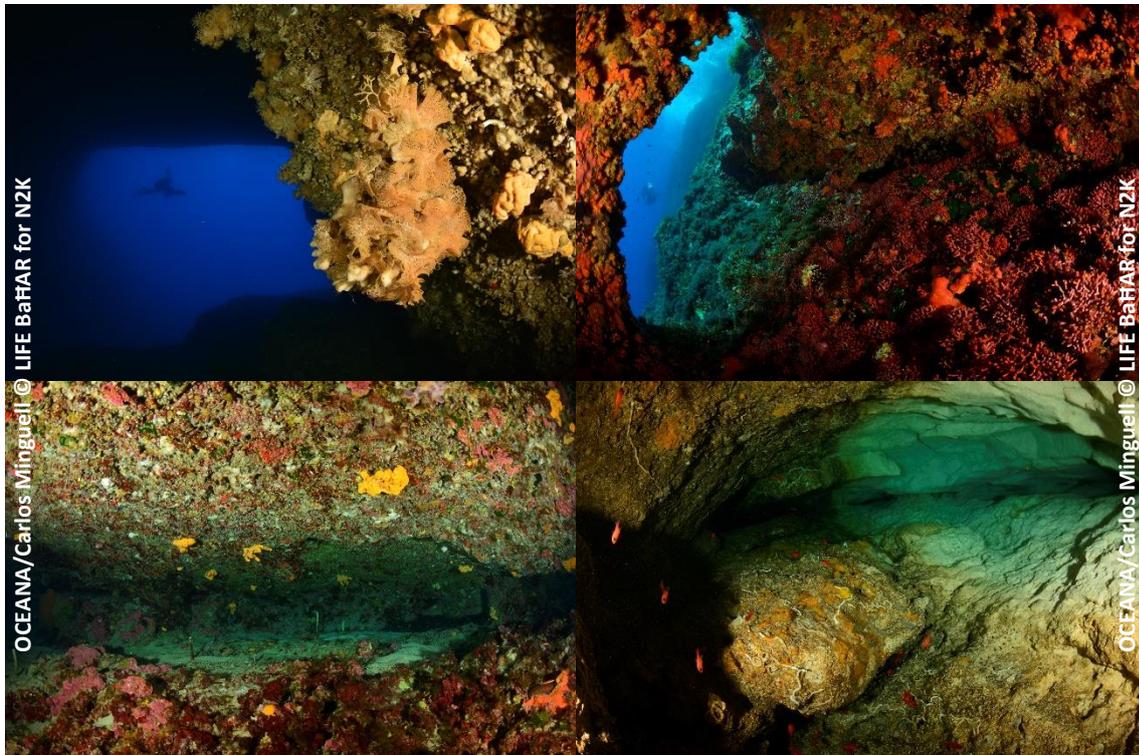


Figure 5.22: Different sea caves observed during the surveys - to be targeted by After-LIFE measures MM5, MM7, and MM10



Figure 5.23: Marine litter and remains from fishing gear observed in deeper waters during the offshore surveys - targeted by After-LIFE measures MM6, MM11 and MM12



Figure 5.24: Marine litter washed up in a coastal caves - targeted by After-LIFE measure MM6



Figure 5.25: A colony of red coral, *Corallium rubrum* - targeted by After-LIFE measure MM1

Deliverables

- The After-LIFE Conservation Plan, available online: <https://lifebahar.org.mt/wp-content/uploads/2018/11/After-LIFE-Plan.pdf>

5.2 Dissemination actions

5.2.1 Objectives

The objectives of the dissemination plan were to enhance stakeholder understanding of conservation and management of marine resources, on the project, LIFE+ funding and the Natura 2000 Network, and to increase participation by, and coordination of, stakeholders.

The aim was to enable and achieve active participation between all stakeholders during the whole project duration and keep such levels of participation after the project is finalised. The project relied on the cooperation between different relevant groups, entities and authorities (including project beneficiaries). Conflicting or overlapping roles were brought together and alternatives identified to achieve a common goal.

In relation to increasing awareness, the following actions have been implemented:

- The launch (E1) kick-started the extensive coverage during the project lifetime;
- An awareness-raising campaign (E2) which used different media (print, TV, internet etc.);
- Information activities reached out to the public (E3);
- A project website was created and will be maintained (E5) over the next 5 years until June 2023;
- Notice boards (E6) were placed in strategic places;
- A layman's report was distributed at the closing-off event, together with an info pack (E3, E7, E8).

In relation to increasing the coordination and participation of stakeholders, meetings for stakeholders (A8, E4) were used as a platform to discuss project objectives, and provide a platform for information exchange and consultation.

5.2.2 Dissemination: overview per activity

5.2.2.1 Action E1 Project Launch - led by MESDC

Original timeframe	4 th quarter 2013 to 1 st quarter 2014
Actual timeframe	4 th quarter 2013 to 2 nd quarter 2014
Progress made	Action completed in April 2014

The Project Launch was held at the Grand Hotel Excelsior on 28th April 2014 and was attended by 28 people.

5.2.2.2 Action E2 - Awareness-Raising Campaign - led by MEPA/ERA

Original timeframe	4 th quarter 2013 to 2 nd quarter 2017
Revised timeframe	4 th quarter 2013 to 2 nd quarter 2018
Progress made	<ul style="list-style-type: none"> • Logo and branding developed in February 2014 • Project stationery (notepads, biros) produced in September 2014 • 3945 biros and 3949 notepads disseminated during the project lifetime at various events • Production and airing of 6 info-slots during prime-time on national television station completed in 2016: <ul style="list-style-type: none"> - the first three info-slots in 2015 provided information on Natura 2000, the need for protection and management, and the aims of the project, and were aired eighteen times before the 8pm news on TVM (between 13th August 2015 and 28th September 2015) - the three info-slots in 2016 focused on reefs, sea caves, and anthropogenic impacts on the marine environment, and were aired seventeen times (before/after the 8pm news on TVM between 1st and 30th September 2016) - The info-slots are available on the project's YouTube channel. • 11 press releases published by project beneficiaries and 2 by outsiders about the project conference⁸ • 16 interviews on the project given on TV/Radio • 6 email shots were sent to the general public through MEPA/ERA mailing list (361 email addresses on email list as per end of June 2018; 1500 on mailing list prior to GDPR notification) • Facebook page set up (www.facebook.com/lifebahar) since May 2014, and posts on the project shared, as well as other relevant content • 3242 likes on Facebook page as at 30th June 2018 • Web banners used at four stages during the project (launch, 2015 & 2016 exhibitions, designation of sites)

⁸Links to all PRs issued by the partners are also available on the project website <https://lifebahar.org.mt/publications-press-releases/>

	<ul style="list-style-type: none"> • Photos and videos were uploaded by Oceana to their Flickr account during the A3 surveys in 2015 and 2016 • Project’s Facebook and Twitter were inter-linked on 26th January 2017, so that all Facebook updates/posts were published on Twitter automatically • Additional videos (in Maltese and English) were produced in 2018 through savings, using the footage from the project surveys: <ul style="list-style-type: none"> - A video showcasing the marine environment and biodiversity discovered and observed through the project, refer to Malta’s marine MPAs, and explain the need for management of the sites; - 4 short educational clips on pressures and threats with the following subject and target audience: <ul style="list-style-type: none"> o marine litter in general (targeting the general public) o discarded/lost fishing gear (targeting the fisheries sector; used in action A8) o caves with a focus on diving activities (used in action A8) o shallow coastal habitats focusing on protected and sensitive species (targeting the general public, as well as divers, snorkelers, spear-fishers etc.) - Most of these are available on the project’s YouTube channel
<p>Status</p>	<p>Completed Commenced in October 2013 and completed in June 2018</p>



Figure 5.26: Examples of the various public awareness deliverables - on-board diaries, Facebook posts, articles and press releases, infoslots, and links to project social media

Complementary action outside LIFE

Organisation of event by Oceana at the Excelsior Hotel on the 17th of July 2015, with the aim of sharing insights with Commissioner Vella about the organisation's campaign work to protect European seas. Additional details are provided under action 5.1.3.

In May 2017, ERA was approached to contribute to the development of a series of filmed slots for a TV programme centred around the marine environment. A set of educational clips was to be produced on marine habitats and marine protected areas, and UoM-DoB was approached in parallel to contribute to the programmes through interviews. UoM-DoB and ERA project team members were interviewed, and footage on deep sea habitats and marine caves were provided for inclusion in relevant episodes. The clips were aired in May 2018 (marine caves) and June 2018 (Marine Protected Areas; Deep Sea Habitats).

Additional notepads and biros (4000 of each) were produced at end 2017 using ERA funds, to be disseminated in various events including post-project.

5.2.2.3 Action E3 - Information activities for general public - led by MEPA/ERA

Original timeframe	4 th quarter 2013 to 2 nd quarter 2017
Revised timeframe	4 th quarter 2013 to 2 nd quarter 2018
Progress made	<ul style="list-style-type: none"> • The photographic competition was launched on 27th October 2014 and concluded on the 30th January 2015, with 45 photos submitted, of which 11 photos were found to fulfil the required quality and subject matter and were selected by a panel chosen by MIPP and MEPA. • Another 36 photos by nine photographers were subsequently received through voluntary submissions outside the framework of the competition, following a request made to MIPP members and diving clubs (ATLAM Sub Aqua Club, Calypso Sub Aqua Club, Amphibians Diving Club and Scuba World Diving Club) for voluntary submission of photos; nine of these submissions (from six photographers) were selected by MEPA for the photographic exhibition. • The outdoor photographic exhibition, displaying 20 full-colour A0 photos was held as follows in August of 2015 and 2016: <ul style="list-style-type: none"> - 2015: St George's Square, Valletta; Għar id-Dud, Sliema; Malta National Aquarium, Qawra - 2016: Our Lady of Pompei Square, Marsaxlokk; Grand Harbour Marina, Birgu; Marsalforn Bay, Gozo It is estimated (conservatively) that 3500 people visited the exhibitions. • Prints were exhibited on another two occasions in 2017. • 5000 notebook calendars were delivered and disseminated during the project duration. The format of the calendar was such that it could be used for multiple years, and apart from information on Natura 2000, marine habitats, and the project, it featured the 20 exhibition photos, as well as selected photos from the 2015 surveys and from voluntary contributions.

	<ul style="list-style-type: none"> • 4 different info-sheets (at least 7500 of each) were produced and disseminated as per below during the reporting period: <ul style="list-style-type: none"> - 7500 info-sheet 1 with general information on the project (produced in 2014) - 7407 info-sheet 2 on marine habitats (produced in June 2016) - 482 info-sheet 3 on project results (produced in April 2018) - 69 info-sheet 4 on the new MPAs (produced in June 2018) <p>Soft copies of the infosheets are available online at: https://lifebahar.org.mt/multimedia/ .</p> <ul style="list-style-type: none"> • Additional 10 A0 and 10 A2 prints, featuring photos of species and habitats from the project surveys, were produced using savings and exhibited at the Esplora Science Center in Kalkara, Malta from 30th May 2018 to 5th June 2018, in conjunction with the closing event. Approximately 540 people visited Esplora during the week in question.
<p>Status</p>	<p>Completed. Commenced in January 2014; completed in June 2018.</p>

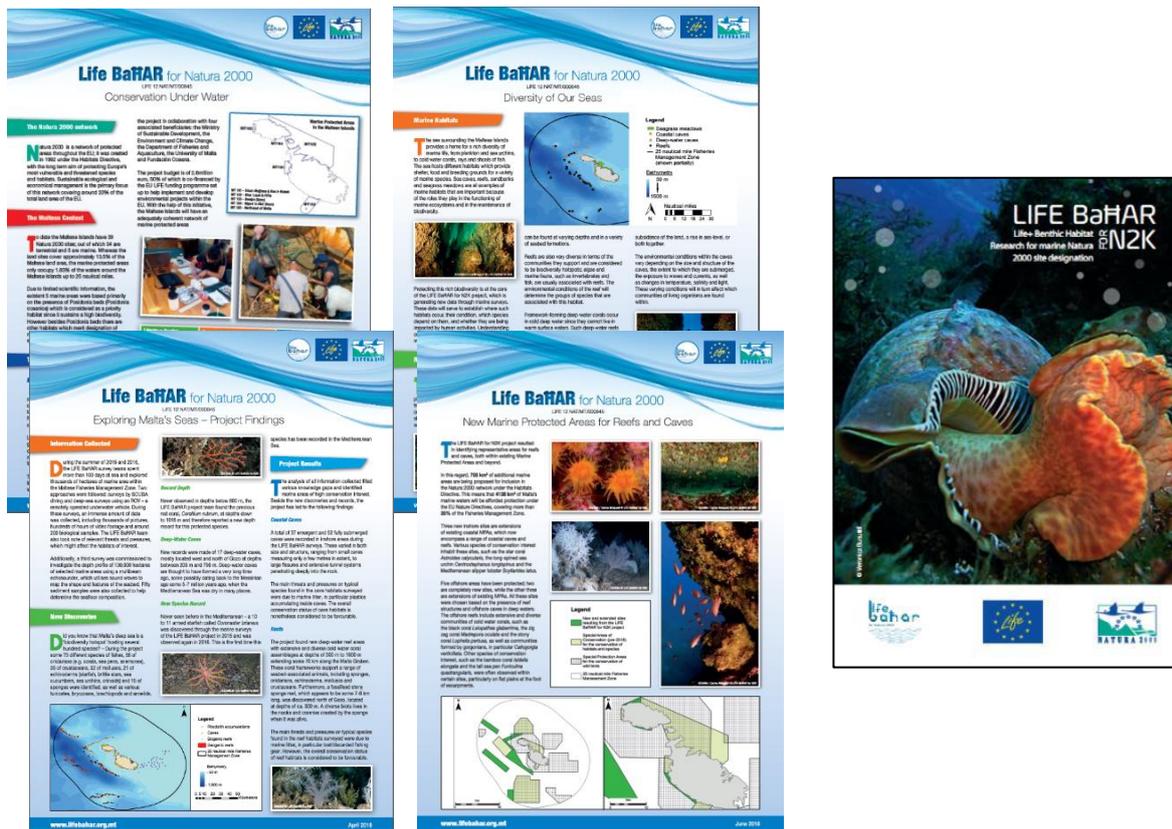


Figure 5.27: Infosheets and notebook calendar produced during the project



Figure 5.28a: Outdoor photographic exhibitions held in 2015 and 2016



Figure 5.28b: Exhibition held at Esplora in conjunction with the European Sustainable Development Week and the closing event of the LIFE BaHAR for N2K project in June 2018

Complementary action outside LIFE

The exhibition prints were exhibited as part of ERA's stand in the Greenfest between 25th and 30th April 2017.

Seventeen of the prints were displayed at the Justus Lipsius Building in Brussels, the main seat of the Council of the EU and of the General Secretariat of the Council, throughout June 2017 to showcase Malta's marine environment.

The notebook calendar (2500 copies) was reprinted at end 2017 using ERA funds, to be disseminated in various events including post-project.



Figure 5.29: Exhibition held during the 2017 Greenfest in Valletta (left); Exhibition held at Justus Lipsius Building in Brussels in April 2017 in conjunction with Malta's Presidency of the EU (right)

5.2.2.4 Action E4 - Information and knowledge transfer activities for specific stakeholders - led by MEPA/ERA

Original timeframe	4 th quarter 2013 to 3 rd quarter 2016
Revised timeframe	4 th quarter 2013 to 2 nd quarter 2018
Progress made	<ul style="list-style-type: none"> • A comprehensive list of key stakeholders was developed in Q1 2014 and updated in the course of the project (as per Table overleaf). • Four stakeholder seminars were held during project duration: <ul style="list-style-type: none"> - 1st stakeholder seminar held on 5th March 2014 - 2nd stakeholder seminar held on 30th November 2015 - 3rd stakeholder seminar held on 4th July 2017 - 4th stakeholder meeting held on 21st November 2017 • Conference on MPAs in the Mediterranean held between 11th - 13th of September 2017 with approximately 100 attendees, and participation by 10 foreign experts and the Commission (Nature Unit). • Evening reception held on the 13th September and boat trip held on the 14th September for conference participants. • Report on stakeholder participation throughout the project finalised in March 2018; available online at https://lifebahar.org.mt/reports/
Status	Completed Commenced in January 2014; completed in March 2018

Stakeholder seminars

- The first seminar provided an overview of the project and emphasised the importance of stakeholder participation, and with a focus on action A1. This was followed by a discussion on potential sources of data and data providers, as well as the type of data that could be obtained and how this could be collected and mapped.
- The second seminar focused on the 2015 LIFE BaHAR Project Survey Expedition, past research, anthropogenic impacts observed during the expedition, as well as future work in 2016. Following the presentation by UoM-DoB, views were shared on potential areas of interest for the 2016 surveys, as well as feedback on anthropogenic impacts relating to marine habitats, in particular impacts from diving (in caves) and from discarded fishing gear (benthic habitats).
- The third stakeholder seminar was held on 4th July 2017 to inform stakeholders on the outcomes of the project surveys, which were completed in 2016, and to provide them with information on how these results will be used in the next step of the project - the identification of new potential Sites of Community Importance.
- The fourth stakeholder meeting was held on 21st November 2017 and the aim of the seminar was to inform stakeholders on the next steps, project outcomes after the final data analysis and to invite everyone to participate in an open discussion on potential future conservation measures.



Figure 5.30: 3rd and 4th stakeholder meetings at ERA premises

Table 5.1: Comparison between the stakeholders chosen and their relevance to the project/ potential impacts on targeted habitats

Stakeholder ⁹	Relevance to the project / potential impacts on targeted habitats
Armed Forces Malta	Responsible for enforcement at sea. Future role for eventual management, since certain areas at sea may be reserved for military operations or are designated for other use by AFM.
Civil Protection Department	Role in pollution contingency response and safety (salvage operations). Potential future role in management of marine protected areas.
Continental Shelf Department (Ministry for Transport and Infrastructure)	Regulator of oil exploration and marine surveys. Potential impacts from the oil exploration sector.

⁹ Excluding project partners

Malta Police Force - Administrative Law Enforcement Section	Supports the operations of district police officers in their fight against environmental crime. Responsibilities also include the enforcement of maritime regulations in the inner coastal areas. Potential future role in management of marine protected areas.
Malta Tourism Authority	Regulator of the tourism industry, with various roles including promotion of the sector, licensing, and advising Government on the planning and development of the tourism industry, as well as on the infrastructure supporting the industry. Potential future role in management and awareness-raising of marine protected areas, in view of impacts from tourism-related activities.
Ministry of Gozo	Responsible for the Gozo Affairs portfolio. Potential impacts from tourism sector and marine-related activities taking place in Gozo and Comino (diving, anchoring, etc.).
Planning Authority	Responsible for development planning regulation and policy, including at sea (responsible for Marine Spatial Planning in Maltese waters). Potential future role in management of marine protected areas in relation to marine spatial planning measures.
Superintendence for Cultural Heritage	Responsible for ensuring the protection and accessibility of Malta's cultural heritage, both terrestrial and underwater. Regulatory role for marine scientific survey. Potential future role in management of marine protected areas, e.g. vis-à-vis historical wrecks (as applicable).
Transport Malta	Regulator of merchant shipping, ports & yachting, marine transport and recreational boating (including issuing of Notice to Mariners). Potential impacts from vessel anchorage, litter and discharges. Potential future role in management of marine protected areas vis-à-vis measures on regulated sectors and related enforcement.
Wild Birds Regulation Unit	Responsible for overseeing and driving the implementation of Government policy in relation to sustainable hunting governance and wild bird conservation. Future role in management of marine protected areas in relation to regulatory measures for seabird conservation.
University of Malta <ul style="list-style-type: none"> • Department of Classics and Archaeology, Faculty of Arts • Department of Geosciences, Faculty of Science • Department of Geography, Faculty of Arts • Institute of Sustainable Development and Climate Change 	Departments whose research was relevant to the project, in particular data collection. The research areas of these departments include maritime archaeology, operational oceanography, marine geology, coastal geomorphology, coastal management, climate change adaptation and mitigation. Key experts within these departments were consulted in view of data collection and contribution to research.
<i>Federazzjoni ta' l-Ghaqdiet tas-Sajjieda Dilettanti Malta</i>	The Federation, representing amateur fishermen, has various objectives including that every member association should protect the environment where its members carries out fishing practices. Potential impacts from discarded fishing gear, fishing methods that impact benthic habitats. Potential future involvement in the management of protected areas through changes to their activities.

Fish Trawlers Owners Association	Potential impacts in benthic habitats from trawling. Potential future involvement in the management of protected areas through changes to their activities.
<i>Ghaqda Koperattiva tas-Sajd Ltd</i>	Co-operative representing various commercial fishers. Potential impacts from discarded fishing gear, fishing methods that impact benthic habitats. Potential future involvement in the management of marine protected areas through changes to their activities.
<i>Koperattiva Nazzjonali tas-Sajd</i>	Co-operative representing various commercial fishers. Potential impacts from discarded fishing gear, fishing methods that impact benthic habitats. Potential future involvement in the management of marine protected areas through changes to their activities.
Marsaxlokk Artisanal Fishers	NGO representing the artisanal fishing community of the fishing village of Marsaxlokk. Potential impacts from discarded fishing gear, fishing methods that impact benthic habitats. Potential future involvement in the management of protected areas through changes to their activities.
Atlam Sub Aqua Club	Major diving club, with over 100 members. Potential impacts on targeted habitats (physical damage) by divers and vessel anchoring. Data collection and potential involvement in future monitoring.
Calypso Sub Aqua Club	Major diving club. Potential impacts on targeted habitats (physical damage) by divers and vessel anchoring. Data collection and potential involvement in future monitoring.
Federation of Underwater Activities Malta (FUAM)	Association whose charter is to encourage, promote and facilitate the national development of sporting, intellectual, educational and conservative aspects related to the underwater environment. Also organises international underwater photographic competitions, specialised courses and scientific research. Data collection and potential involvement in future monitoring/awareness-raising.
Professional Diving Schools Association (PDSA)	Represent the interests of the diving community in Malta; includes approximately 35 member dive centres. Potential impacts on targeted habitats (physical damage) by divers and vessel anchoring. Data collection and potential involvement in future monitoring.
Malta Hotels and Restaurant Association (MHRA)	Major association in the tourism sector; represents the interests of its members on several national policy-making bodies, including the board of the Malta Tourism Authority and the Malta Council for Economic and Social Development. Various hotels and restaurants are located on the coast, bordering MPAs, and can have an impact in view of noise, light, discharges and litter; furthermore, various hotels include water sports centres and scuba diving schools, which activities can have an impact on target habitats. Potential future role of specific members/the Association in relation to sustainable tourism conservation measures, awareness raising, and private sector involvement in the management of MPAs.
BirdLife Malta	Coordinating Beneficiary of LIFE+ Malta Seabird project; NGO managing selected SPAs. Can contribute through awareness-raising, data collection and research.

Biological Conservation Research Foundation (BICREF)	NGO with interest in the marine environment - assists in various long-term projects which include cetacean (dolphin and whale) and turtle field research, coastal, marine and terrestrial biodiversity research. Can contribute through awareness-raising, data collection and research.
Din l-Art Ħelwa	National Trust of Malta, is a non-governmental, not-for-profit, voluntary organisation founded to safeguard the historic, artistic and natural heritage of Malta. Din l-Art Ħelwa also co-manages a national park bordering an MPA. Can contribute through awareness-raising and possibly through other specific actions.
Fish4Tomorrow	NGO dedicated to creating a culture of sustainable seafood consumption through effective campaigning and lobbying. Can contribute through awareness-raising.
<i>Flimkien Għal Ambjent Aħjar (FAA)</i>	Non-profit NGO committed to preserving the heritage of Malta and Gozo. Lobbies for better planning and land-use policies, and carries out eco-projects that aim to instigate social change and raise public awareness. Can contribute through awareness-raising.
Friends of the Earth Malta	NGO working on a range of projects and advocacy campaigns for environmental and social justice. Can contribute through awareness-raising.
Gaia foundation	NGO managing selected coastal SACs. Can contribute through awareness-raising, data collection and research.
International Ocean Institute	Non-profit organisation devoted to the sustainable development, as well as the management and conservation, of the world's oceans. Can contribute through data collection and research. Potential future involvement in awareness-raising.
Majjistral Nature and History Park	National natural park which includes a Natura 2000 SAC and borders an MPA; managed by the Heritage Parks Federation consisting of 3 NGOs involved in coastal management, cultural restoration and environmental protection. Can contribute through awareness-raising and possibly through other specific actions.
Nature Trust Malta	NGO committed to the conservation of Maltese nature by promoting environmental awareness, managing areas of natural and scientific interest, and lobbying for effective environmental legislation. Nature Trust manages various coastal SACs. NTM's Wildlife Rescue Team is dedicated to the rescue and rehabilitation of protected wildlife. Can contribute through awareness-raising, data collection and research.
Sharklab-Malta	NGO with interest in the marine environment - dedicated to research, education and raising greater awareness about all elasmobranchs (sharks, rays, skates and chimaera) around Malta and within the Mediterranean Sea. Can contribute through awareness-raising, data collection and research.

Conference

- The LIFE BaHAR project conference, titled 'Marine Protected Areas in the Mediterranean - Sharing expertise for effective conservation', was held at the Radisson Blu Golden Sands Hotel between the 11 - 13th of September, and was attended by 95 participants.



Figure 5.31: LIFE BaHAR conference - Day 1

- Presentations on the project given by project team members from UoM-DoB, Oceana, ERA and DFA; presentations on Natura 2000 in Malta, ongoing work on management and monitoring, and synergies were given by ERA speakers and BirdLife Malta; presentations on MPA policy, management and habitats monitoring were given by 10 foreign speakers from 6 Mediterranean countries, and the European Commission (Nature Unit).
- A detailed list of invited speakers is provided in Table 5.2 overleaf, and the presentations are all available online.¹⁰



Figure 5.32: Presentations were given by the project team, BirdLife Malta and foreign speakers.

¹⁰ <http://lifebahar.org.mt/great-success-life-bahar-n2k-conference-concludes-14th-september/>

Table 5.2: List of invited foreign speakers to the LIFE BaHAR for N2K conference

Name	Representing	Role
Vedran Nikolic	DG Environment, Unit D.3 - Nature Protection	<u>Speaker Day 1:</u> Marine Natura 2000: from designation to effective management
Atef Ouerghi	RAC/SPA (Regional Activity Centre for Specially Protected Areas)	<u>Speaker Day 1:</u> Site designation and related projects in Mediterranean context, including MedKeyHabitats and MedMPANet
Carlo Nike Bianci	Professor at Università di Genova	<u>Speaker Day 1:</u> Habitats/species of interest and relevance in Med context
Bruno Meola	MedPAN	<u>Speaker Day2:</u> Management of MPAs in the Mediterranean
		<u>Speaker Day 3:</u> Development and Monitoring of Conservation Objectives for marine Natura 2000 sites
Valentina Cappanera	Portofino MPA/SPAMI, Italy	<u>Speaker Day 2:</u> Experience with management of MPAs in the Northern Mediterranean
Ziad Samaha	IUCN-ROWA / Ministry for the Environment, Lebanon	<u>Speaker Day 2:</u> Experience with management of MPAs in the Southern Mediterranean
Daniel Cebrian	UNEP/MAP	<u>Speaker Day 3:</u> Marine monitoring- ecosystem approach
Enric Ballesteros	Researcher, Spanish National Research Council	<u>Speaker Day 3:</u> Monitoring techniques for reefs
Vasilis Gerovasileiou	Scientist, Hellenic Centre for Marine Research	<u>Speaker Day 3:</u> Monitoring techniques for caves
Gerard Pergent	Professor University of Corsica	<u>Speaker Day 3:</u> Speaker Day 3: Monitoring techniques for seagrass meadows
Ameer Abdulla	Senior Advisor for the PANACeA project, ECT, Malaga	<u>Speaker Day 2:</u> Regional and Spatial Patterns in Marine Biodiversity and Human Impacts in the Mediterranean: Implications for Management and Policy

- On the third day, the afternoon session was dedicated to break-out sessions, focusing on Management and Monitoring. Participants were split into six groups to discuss different aspects; the groups were selected on the basis of their preferred topic (management/monitoring) and to ensure a mix of foreign experts, local stakeholders, project team representatives, and general public in each. Each group was given focus topics and questions to discuss:
 - On Management: lessons learnt from each of the two case studies presented and discussions *vis-à-vis* the local context; stakeholder roles/responsibilities, and the benefits of MPAs and communication.
 - On Monitoring: one group on reefs and caves, another on *Posidonia oceanica*, and another on monitoring of pressures and threats.
 - Conclusions from the six groups were then given in a plenary session.

- The focus for each discussion was based on information presented in the conference presentations and general aspects of the topic. The participants engaged in 1.5 hours of intensive discussions on the respective topics and had considerable outputs at the plenary session. This approach received positive feedback from all participants, who appreciated the opportunity to discuss such matters and address their questions to the experts and local authorities.



Figure 5.33: Breakout sessions



Figure 5.34: Group photo at end of conference

- An evening reception was held on the 13th of September, and a guided boat trip for conference participants was conducted on the 14th of September; the boat trip took participants from St. Paul's Bay to Mgarr Ix-Xini (Gozo) and around the island of Comino. Information on the Natura 2000 sites visited was given by ERA and BirdLife Malta.

5.2.2.5 Action E5 - Project Website - led by MEPA/ERA

Original timeframe	4 th quarter 2013 to 2 nd quarter 2017
Revised timeframe	4 th quarter 2013 to 2 nd quarter 2018
Progress made	<ul style="list-style-type: none"> • Official project website (www.lifebahar.org.mt) launched in July 2014 and 11,444 hits reached as at end of September 2015. • Website regularly updated on project progress, current events and presentations. • The layout updated in the course of the project for dedicated sections (e.g. expedition page for on-board diaries and weekly videos) and to ameliorate user experience as the project developed (e.g. to facilitate navigation through project results, in view of project conclusion in 2018). • There was a continuous increase in website visits, reaching 260,980 at end of June 2018. • There were over 15,000 sessions on the project website during the course of the project, of which 87.3% were new users. • Approximately 50% of all the sessions originated from Malta, while the others originated from countries all over the world, as can be seen in the figure below; the main users originated from the USA (9%), UK (6%), and other EU Members States including Spain, Italy, Germany, Greece, Belgium, and France (16% in total). • The mailing list varied from 1200 persons (MEPA mailing list) to over 1500 (ERA mailing list), but had 361 people listed at the end of the project following the coming into force of the new General Data Protection Regulations (GDPR) in May 2018, which required people to actively consent for their information to be kept.
Status	Completed. Commenced in March 2014; was completed in June 2018 (to be kept in place until 2023).



Figure 5.35: Sessions on the project website shown by country

5.2.2.6 Action E6 - Notice Boards - led by MEPA/ERA

Original timeframe	4 th quarter 2013 to 2 nd quarter 2017
Revised timeframe	4 th quarter 2013 to 2 nd quarter 2018
Progress made	<ul style="list-style-type: none"> • 2 roll-up banners were printed in English in April 2014 and an additional roll-up banner printed in Maltese in October 2014. • One roll-up banner was displayed at MEPA-EPD reception area (as from 25th April 2014) and later at ERA reception; another was displayed at MESDC main offices, while the third was displayed at the University of Malta's Department of Biology. • The roll-up banners were used at various events, including all the photographic exhibitions (in Malta and Gozo), the project conference, and the closing event. • 6 notice boards, containing information about the project, Natura 2000 network, LIFE programme, and existing marine protected areas, were installed in October 2015. • Three noticeboards were installed on the island of Gozo - at Dwejra, Marsalforn, and Mġarr ix-Xini, and another three were installed on the island of Malta - at Mġarr, Żurrieq and Mellieħa, following approval of the respective Local Councils. The selected locations were popular with locals and tourists and adjacent to the existing SCIs. • 6 new notice boards with information on the newly designated LIFE BaĦAR sites were designed, procured and installed in June 2018 instead of the noticeboards installed in 2015 (which had since weathered). • The information presented covers the whole marine protected area network, including the sites designated through the LIFE+ Migrate and LIFE+ Malta Seabirds projects in 2016. • The original locations were retained as still valid for the expanded network and offshore sites.
Status	Completed Commenced in January 2014; was completed in June 2018



Figure 5.36: Noticeboard in Mellieħa (2015) (left) and noticeboard in Mġarr ix-Xini (2018) (right)

5.2.2.7 Action E7 - Layman's Report - led by MEPA/ERA

Original timeframe	2 nd quarter 2017
Revised timeframe	4th quarter (October) 2017 to 2 nd quarter (May) 2018
Progress made	<ul style="list-style-type: none"> • The text and draft layout of the Layman’s Report was prepared by ERA in early 2018 and reviewed by the partners in March 2018, following which it was professionally translated to Maltese and Spanish. • The design was developed by ERA with the chosen supplier and in consultation with partners over the period 17th May to 31st May 2018. • The report was subsequently printed in 3 languages (English, Maltese and Spanish) and delivered on 4th June 2018: <ul style="list-style-type: none"> - 580 copies in English - 156 copies in Maltese - 174 copies in Spanish • Soft copies in all languages were uploaded on the project website on 18th June 2018. • First dissemination at closing event of 5th June 2018. • The report will be utilised and further disseminated within the framework of the After-LIFE plan.
Status	Completed. Commenced in February 2018 and completed in June 2018.

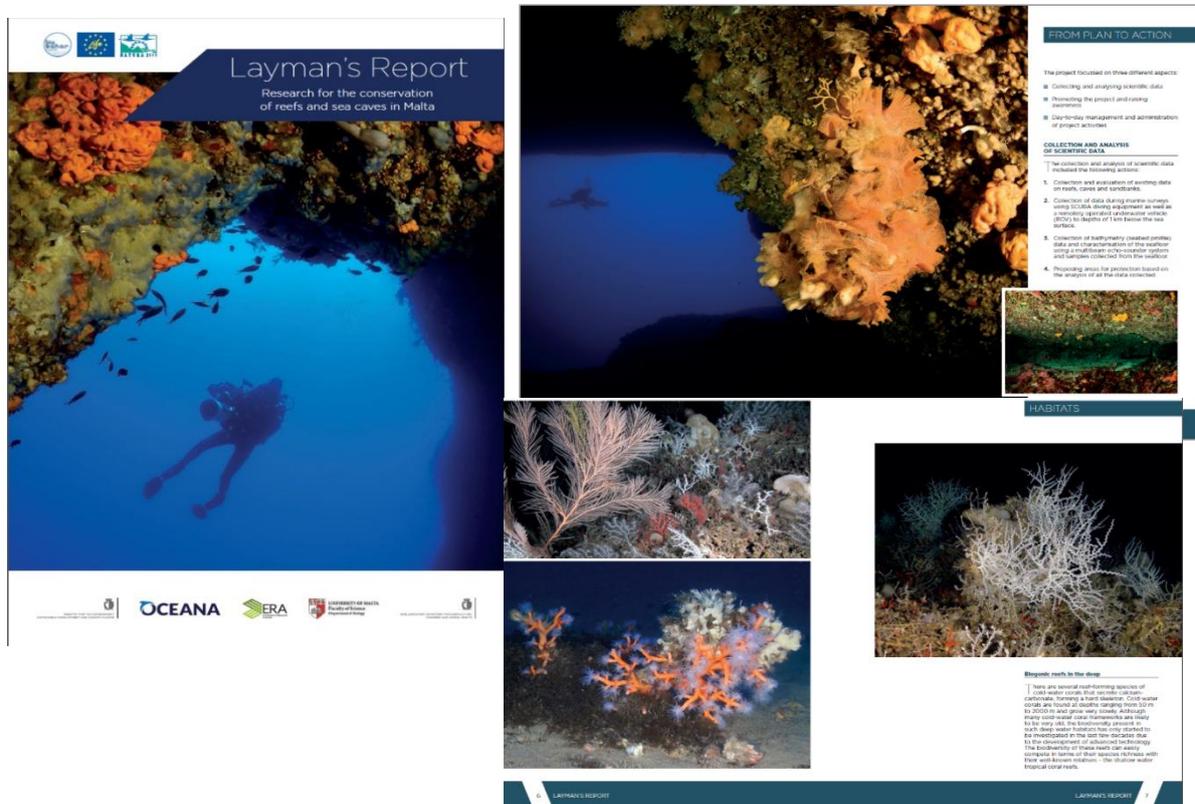


Figure 5.37: Excerpts from Layman’s Report, available online <https://lifebahar.org.mt/laymans-report/>

5.2.2.8 Action E8 - Closing off event - led by MESDC

Original timeframe	1 st quarter 2017 to 2 nd quarter 2017
Revised timeframe	1 st quarter 2018 to 2 nd quarter 2018
Progress made	<ul style="list-style-type: none"> • Official preparations began in March 2018 and date set in April 2018. • Procurement for the venue initiated in Q2 2018 and the venue was booked on 3rd May 2018. • An agreement was reached with Esplora management for use of the main hall of the Science Centre to host the photographic exhibition with the new prints from the project surveys, in conjunction with the closing event. • The closing event was held on 5th June, 2018 and attended by 41 persons including various stakeholders. • The Hon. Dr José Herrera, Minister for the Environment, Sustainable Development and Climate Change, visited the LIFE BaHAR exhibition at Esplora and then proceeded to launch the closing event by declaring the new sites designated through the LIFE BaHAR project, announcing that Malta is increasing the protected marine areas from 3,487 km² to 4,138 km², reaching over 35% of the Maltese waters through the designation of these additional eight Marine Protected Areas (MPAs). • Following introductory speeches, a video on Malta's Marine Protected Areas (produced through action E2) was shown, showcasing the findings and results of the project. • This was followed by presentations given by the LIFE BaHAR project team, providing more information on the work done throughout the project and the results achieved. • The event closed with a reception and networking event.
Status	<p>Concluded</p> <p>Commenced in March 2018 and concluded in June 2018</p>



Figure 5.38: Closing event of the LIFE BaHAR for N2K project at Villa Bighi

5.3 Evaluation of Project Implementation

All of the actions were successfully implemented, and the planned deliverables produced. In the course of the project, a number of issues arose, which are summarised below.

Data collection and analysis

Issues occurred in regard to harmonisation and duplication of existing data (in view of different sources and methodologies), as well as lack of the necessary metadata since various entities were then in the process of making their data INSPIRE compliant.

External expertise was required in order to make the final data INSPIRE compliant, since this is a very technical/specialised process; this need had not been foreseen when the project was developed.

In terms of data from the surveys, the human resources and/or time required to carry out the preliminary analysis of the survey footage and photos was much more than originally allocated at planning stage. Furthermore, this task could not be re-assigned in view that it required specialised personnel (habitats experts); hence a flexible approach was adopted by the various partners concerned in relation to data interpretation, with the phasing and time allocated to actions A2, A3 and A5 adjusted accordingly.

The dual value of the footage and photos from the survey is also worth noting: apart from the research component, its use in various E actions (such as E2, E3, E5) was very effective for raising awareness and bring the results of the project to the general public. It will continue to provide a library of images that can be used for further awareness raising, including outside the framework of the project, in future years.

Habitat survey methodology

The methodology utilised by Oceana for the offshore areas, making use of the vessel sounder to carry out the initial broad survey for bathymetry, meant that this task could still be carried out despite the lack of detailed bathymetric data, which was not available prior to the surveys.

Adoption of a flexible survey strategy, which could be adapted to prevailing weather conditions also meant that the lost days were minimised. One lesson that can be learnt from this project is the value of carrying out an initial depth sounding in all areas to verify charting information. In the first few weeks of the 2015 expedition, it had been confirmed that a number of areas did not contain the expected features and were subsequently excluded from the detailed surveys and the bathymetric surveys.

Procurement risks and timeframes

A number of issues arose in relation to public procurement, primarily for the bathymetric survey which in turn led to the extension on the project duration. Lessons learnt relate to the risks and limitations involved subcontracting this type of service. These include:

- the necessary bureaucratic nature of the process and timeframes involved in the tendering process;

- the risk of bids exceeding the allocated budget in view of the lack of a clear indication of the budget and difficulties to limit the budget through technical aspects (which can then be appealed or which limit the potential bids);
- lack of flexibility to change the parameters of the service once the process is underway;
- tight timeframes due to the nature of the survey and risk of delays due to weather, as well as technical and logistical issues that arise.

While some aspects can be mitigated through adequate planning and experience, others are difficult to plan for or foresee especially in legislative framework relating to public procurement, whose aim is to provide for transparent and open competition.

A possible alternative would be that such services are carried out by a project partner with experience in the field and where the element of external assistance is limited. However, this is not always possible, noting the commercial nature of such surveys, the budget involved and project financing rules.

Human resource requirements

In general, there was also an underestimation of the project management requirements, as well as technical input required on awareness raising tasks. Staff changeovers sometimes led to the allocation of interim staff at higher rates than envisaged. Lessons learnt for future projects can be summarised as follows:

- Plan for sufficient resources for project administration and management on a daily basis.
- The role of the project manager is essential for such projects so as to streamline actions and processes, maintain overview throughout the project duration and handle tasks that may arise, such as the Request for Amendments, assisting the beneficiaries, etc.
- Ensure sufficient human resources for PR and communication aspects for regular updating of the website and Facebook page to increase outreach and interest, as the work involved can be underestimated.
- Plan for the technical input and scientific oversight that would be required for public awareness deliverables, e.g. to produce correct scripts and select/assign related footage.

Communicating with stakeholders

As Malta is surrounded by the sea and many recreational and economic activities centre on the use of the marine environment, there are various stakeholders to be considered when approaching the declaration and management of protected marine sites. Efforts were made to integrate and consult all relevant stakeholders at strategic points during project implementation. However, there was often a notable lack of open discussion on specific aspects and limited attendance. This was connected to the following aspects:

- Although the majority was aware of the areas designated, the process involved establishing management under the HD and BD was not clear to the audience and most were not familiar with the respective requirements and timelines.
- A feeling of frustration among stakeholders, since although some MPAs were designated, there were limited examples of tangible actions to showcase their relevance to the stakeholders' interests.
- Fear of restriction of selected economic activities and impact on livelihoods.

Furthermore, it appeared that the consulted stakeholders were more interested in coastal areas and management aspects rather than new designations and offshore areas (with the exception of fishermen, who operate in the offshore areas).

These results will be taken into consideration when approaching the stakeholders on the specific management measures, which will try to include and engage stakeholders more directly in the implementation of such.

Additionally, the project communication deliverables showed that some were more effective than others and this will help in terms of future outreach and awareness campaigns.

5.4 Analysis of long-term benefits

5.4.1 Environmental Benefits

(a) Direct / quantitative environmental benefits

(i) Conservation improvement for the targeted habitats

The project led to the declaration of 8 new protected areas (of which some are extensions), based on the information gathered through the A3 surveys, and which are established to protect reefs and sea caves. This led to an overall increase of 700 km² in marine protected area.

The increase in the MPA network coverage led to the additional protection of over 100 inshore caves (A3 & A1 data) and 17 newly discovered offshore caves (A3) that were not included in previously designated sites, which led to the overall protection of 148 known caves in Maltese waters.

The location of these caves (habitat 8330) has been mapped and a quantitative assessment was possible through the project. In the course of the project, 89 caves, of which 37 are emergent, were located and surveyed along the coast of the Maltese Islands, which filled in the previously existing data gaps on this important habitat and will support future management in further efforts to investigate these in more details.

The coverage of reef habitats (1170) has also increased, both in coastal areas, but especially through the offshore areas which were chosen based on the presence of reef structures and offshore caves in deep waters. The area covered by this habitat within the pSCIs and SCIs has increased by 103.3 km², i.e. 107.63 km² compared to 4.33 km² in 2012.

The offshore areas account for 94% of this habitat, and comprises geogenic reefs, as well as habitat-forming species such as the cold water corals *Madrepora oculata*, *Leiopathes glaberrima*, *Lophelia pertusa*, and *Corallium rubrum*, and communities formed by gorgonians, in particular *Callogorgia verticillata*. In the coastal sites, where the coverage totals 6.23 km², this habitat comprises geogenic reefs, as well as the habitat forming orange coral *Astroides calycularis*. Coverage of coastal reefs has increased by 1.90 km², or 44%, compared to 2012, both as a result of extended areas, as well as better delineation of the geogenic reefs.

Sandy areas (that could potentially host sandbanks) were also targeted by the project, in view that at project preparation and commencement stage, Malta's sufficiency for the sandbanks habitat was also being questioned. The data collected on these areas, which are located within previously designated SCIs, will serve to inform and guide conservation measures for these areas.

The designation of Natura 2000 sites is the first step in the protection and management process, for which the conservation objectives and After-LIFE Conservation Plan set out targets and a strategy to be followed by ERA and the relevant stakeholders following project completion.

(ii) Policy and governance implementation

The designation of protected areas for these habitats through the project will be of direct relevance and benefit in relation to the objectives of the Habitats Directive, enabling Malta to conserve important habitats, and for two specific measures in Malta's National Biodiversity Strategy and Action Plan (NBSAP) which reflects the EU Biodiversity Strategy until 2020, namely:

Ecological Network of Protected Areas theme

- EN1: 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.
- EN2: 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.

The After-LIFE Conservation Plan¹¹ provides interim measures for the protection of reefs and sea caves until management plans are in place. These measures are streamlined with requirements under the MFSD, to which LIFE BAĦAR data will contribute and serve as baseline for deep-water habitats. The data obtained on pressures and threats allow for interim measures to address the potential impacts from such, which *inter alia* include efforts to reduce marine pollution (litter) from land-based sources, better regulate activities and address the problem of lost/discarded fishing gear.

The conservation measures for the newly designated sites will be developed based on the information gathered, and in a coherent approach with the management for previously designated sites, including sites designated through the LIFE+ MIGRATE and LIFE+ Malta Seabird project.

These measures will also be considered in the Prioritised Action Framework (PAF) for Malta's Natura 2000 sites.

(iii) Information and communication

The various meetings with stakeholders and the 2017 LIFE BaĦAR conference allowed for ERA to strengthen its relation with stakeholders, increased knowledge among stakeholders, and opened the way for the currently ongoing consultations on draft conservation measures for the future management of Malta's marine protected areas. Furthermore, the experts who attended the

¹¹ Available online at <https://lifebahar.org.mt/reports/>

conference gave valuable insights in science and management approaches from different countries in the Mediterranean. Contacts were established which are expected to be helpful in the future. The conference also allowed local stakeholders to experience different perspectives on MPA management, pose questions to national and internal experts, and discuss in an open forum their concerns, ideas and views, which according to feedback received post-conference, was a welcomed and appreciated opportunity.

On numerous other occasions, stakeholders and the public were informed through the produced project material on the progress and outputs of this project, and the biodiversity found within Maltese waters.

Discussions held under action A8, including the display of pressures observed generated by economic activities, informed stakeholders on their potential impact and allowed that together they explored ways that could lead to an improvement of the current situation from a socio-economic perspective.

(b) Relevance for environmentally significant issues or policy areas

The results of the project, together with the After-LIFE Conservation Plan, will contribute towards the following measures of the NBSAP, through provision of information on the location, extent and conservation status of the target habitats and characteristic species.

Theme - Species and Habitats

- SH2: Species and Habitats of European Community and National Importance are maintained across their natural range via the implementation of adequate conservation measures, 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.
- SH4: 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.

From a policy perspective, the project outcomes will also help address the current data gaps, which are limiting the coverage of the monitoring processes in the marine environment. Within this context, the results of the project will serve to inform the further development of monitoring regimes on both listed and predominant MSFD habitats, and hence enable the assessment of environmental status over a wider marine area. The data collected on marine litter can also be utilised for targeted clean-ups, while information on likely land-based sources may be used to support the national waste management strategy.

Streamlining of conservation measures will be sought to address the different, but often overlapping/synergistic, requirements of the Habitats Directive, Birds Directive, Water Framework Directive, Marine Strategy Directive and various Multilateral Environmental Agreements. The identification of conservation objectives coupled to an indication of pressures on the benthic habitats would enable the identification of conservation measures which would target the achievement of good status as required by marine-related environmental policy.

The project's outcome is also in line with the 7th EU Environment Action Programme (EAP), specifically one of the three key objectives i.e. "to protect, conserve and enhance the Union's natural capital". Of the four 'enablers' that the 7th EAP lists, the project will in particular contribute as follows:

- better information by improving the knowledge base - through the data collected, analysed and interpreted on marine habitats and species;
- better implementation of legislation - through designation of marine SCIs on the basis of scientific data, and enabling the application of a risk-based approach towards the achievement of relevant MSFD objectives.

The data collected through the project is also of importance from a research perspective, in view of the significant data gaps that existed on marine habitats and species. The project has led to interesting scientific findings, such as the discovery of new areas with extensive and diverse cold water coral assemblages, the establishment of a new depth record for red coral, and the findings of a fossil sponge reef and deep-water caves, apart from extensive information gathered on the biotic assemblages of reef and cave habitats.

Moreover, data on the threats and pressures, particularly marine litter, affecting these habitats was compiled. Information on litter in deep-sea habitats and less accessible shallow-water habitats was scarce prior to the project. In particular, for offshore habitats litter monitoring was previously only carried out for sedimentary bottoms, on which trawl surveys have been carried out routinely since 2005. The LIFE BaHAR project for the first time allowed for extensive data on litter abundance, distribution, and impacts on reef habitats to be collected.

The data collected will also be of benefit for the fisheries sector, and help guide policy and regulatory measures that may be deemed necessary, both as a direct follow-up through the After-LIFE Conservation Plan, or in relation to other sectoral legislation, such as Council Regulation (EC) No 1967/2006 concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea. Within this context, the data will enable synergies between fisheries and environmental policy in accordance with the provisions of the Common Fisheries Policy. The data generated by LIFE BaHAR provide a new source of data on seabed characteristics and stakeholder opinions of the Malta's marine environment. This data can be used to evaluate other sources of data, hence improving the overall quality of data at hand when making legislative and management decisions.

Lost/discarded fishing gear, which was observed in the surveys, will inform conservation measures and interim measures (After-LIFE Conservation Plan) to support the implementation of the MSFD, investigating alternatives for fishing gear and reducing litter from fishing activities.

5.4.2 Long-term benefits and sustainability

(a) Long-term / qualitative environmental benefits

The expected longer-term results of the project are to achieve sufficiency for two of the three Annex I habitats that are the focus of the project, namely reefs and sea caves, and to maintain/improve their conservation status.

The data collected through the project will serve as a baseline to continue efforts for the conservation of reefs and sea caves within the newly designated sites, and to develop and implement the necessary conservation measures. Thus, further research studies will carry on filling data gaps, as described in the After-LIFE Conservation Plan. UoM-DoB is currently in the process of further analysing the raw data to extract more information on species assemblages and litter observed, which will continue to inform ERA for the management of these sites.

Litter, lost/discarded fishing gear, and commercial activities (e.g. boat trip and diving), which remain a pressure/threat to these habitats are considered in the interim measures of the After-LIFE Conservation plan, which will include for example codes of conduct, investigating the possibility of alternative fishing gear and actions to reduce litter in the sea. The outcomes of these measures will also inform the future conservation measures developed for the sites.

Deliverables produced through the project will serve to inform the public and targeted stakeholders at future events and are available through several media, such as the website and YouTube.

(b) Long-term / qualitative economic benefits

Employment opportunities are included under long-term / qualitative social benefits.

(c) Long-term / qualitative social benefits

The long-term socio-economic benefits will depend on the conservation measures developed for the sites, as it is expected that employment opportunities will be created in relation to the management of the sites, and also for the monitoring of conservation status.

Meanwhile, the After-LIFE explores several options for which external assistance might be sought to support interim measures.

The data will be used by a number of UoM-DoB students for their under- and post-graduate research at the University of Malta; this will serve to train the next generation of marine scientists, many of whom then find work in the environmental sector.

Additionally, the findings from this research will be published in scientific literature and disseminated widely to the public and to practitioners, thus spreading knowledge on Malta's marine environment, as well as providing scientific information on which to base policy and management.

(d) Continuation of the project actions by the beneficiary or by other stakeholders

Continuation of the project will be through the implementation of the After-LIFE Conservation Plan, which will continue into the long-term management of the marine Natura 2000 sites designated through the project. The relevant and responsible entities for the After-LIFE plan will be identified following stakeholder consultations with the relevant bodies, as happened when developing the national Marine Monitoring Plan and in the development of the Programme of Measures.

Events for further dissemination of information material produced through the project, and to present project results, will be identified and utilised as possible.

The reports and outputs (e.g. spatial data) will be further evaluated in the process of establishing management for the marine sites, as well as facilitate national reporting obligations.

5.4.3 Replicability, demonstration, transferability, cooperation

In terms of replicability, since the project is primarily a research project with the objective of designating SCIs for specific Annex I habitats, replication of the methodology would depend on the context and applicability in other Member States.

The visibility of the project results was increased through the launch of an online viewer, which was boosted through social media. Participation of project partners in several conferences, including presentation of outcomes, educational/awareness events and dissemination of relevant project information through online media supported the overall visibility.

Furthermore, the sharing of information and photos and videos obtained through the project reached beyond the Maltese borders, such as image request by the IUCN Mediterranean office (on deep-sea habitats), contributions to other international projects (e.g. data provided to EMODnet) and contribution to international publications (e.g. Springer book on deep-sea reefs).

The underwater footage/images acquired by the professional videographer and photographer, as well as collected by the ROV, did not just inform the project from a scientific aspect but enabled the production of several additional public awareness deliverables that will continue to be used to educate, inform and increase an appreciation of marine biodiversity. This increased the cost efficiency related to the acquisition of the footage and photos in question, as well as the production of said deliverables.

5.4.4 Long-term indicators of the project success

There are a number of actions related to data analysis, stakeholder involvement and communication, as well as use of analysed data for future management, which will continue after the end of the project and will serve as long-term indicators. These include *inter alia*:

- Data analysis of project data gathered through the A3 surveys, with the intention to publish the results;
- Dissemination of LIFE BaHAR material produced through actions E2, E3 and E7 to raise awareness and inform the public about the marine environment, as well as pressures and threats (e.g. through screening of the info-clips);
- Use of obtained data to address pressures and threats through future conservation measures for the sites;
- Continue the dialogue with stakeholders at key stages of the process for the future regulation of sites (E4), and foster cooperation (F3) with other relevant projects and exchange of information and gained knowledge.

The overall conservation status of the identified reef area of more than 10,000ha and over 100 caves shall be further assessed through data evaluation and efforts to investigate biodiversity within these habitats, especially coastal marine caves.

Furthermore, cooperation among different entities shall help to address identified pressures (A3) to enhance intermediate protection for the newly designated sites through the After-LIFE Conservation Plan and guide conservation measures.

As per the Habitats Directive obligations, specifically according to Article 17 reporting, these assessments will be carried out every six years and the conservation status will be assessed.

Indicators for the continuation of project actions through the implementation of the After-LIFE Conservation Plan are listed in the Table 5.3.

At this stage it is not possible to provide quantitative estimates/forecasts for all the indicators since they will be an outcome of the measures themselves and the work that will be undertaken in the After-LIFE. In particular, the number of conservation measures that will be developed and the Annex I cave and reef habitats targeted will depend on further data analysis, discussions with stakeholders, and assessment of options.

Table 5.3: Table of long-term indicators

After-LIFE Measure ¹² / Descriptor	Outputs/Indicators	Forecast
MM1 Investigate and explore options for a system to enable and facilitate the data collection of bycatch of biogenic reef forming species (such as the red coral, <i>Corallium rubrum</i>).	Feasibility report with details on operational set-ups and implementation approaches for the collection of bycatch data for reef-forming species.	<ul style="list-style-type: none"> • 1 Report with recommendations
MM2 Continued analysis of project data to increase the knowledge on species and habitats within Maltese waters, inform future conservation measures and management of resources, and fulfil reporting obligations.	Scientific publications and student dissertations.	<ul style="list-style-type: none"> • Minimum of 4 publications published • Minimum of 8 dissertations produced • Minimum of 30 new data layers produced
	Data layers created; data used to inform national reporting and conservation measures.	
MM3 Investigate and explore options to enhance and facilitate reporting scheme(s) for lost fishing gear from the professional (full and part-time) and recreational sectors for all types of gear used, and assess and outline potential, appropriate automated system-process(es) for logging and disseminating the incoming data.	Feasibility report with details on operational set-ups and implementation approaches for the collection of information on lost fishing gear.	<ul style="list-style-type: none"> • 1 Report with recommendations
MM4 Design and explore cost-effective options for future exploration and revisiting of deep-sea habitats to form part of eventual long-term monitoring/ management programs for the offshore LIFE BaFAR SCIs.	Report on possibilities for deep-sea monitoring including recommendations on frequency and assessing feasibility.	<ul style="list-style-type: none"> • 1 Report with various options
MM5 Characterise specific, large and/or interesting coastal caves, including their physical dimensions, ecological community structures	Survey to identify caves that require conservation priority for conservation measures.	<ul style="list-style-type: none"> • 10 caves characterised via broad brush survey

¹² Please refer to the After-LIFE Conservation Plan for full description of the After-LIFE measures, as well as the indicators and measurable attributes

and threats/pressures present via 'broad-brush' surveys.		
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).	System set-up for assistance of clean-up initiatives.	<ul style="list-style-type: none"> • Minimum of 10 clean-ups supported (2 per annum) • Statistics will be collected in line with the MSFD requirements to monitor progress and contribute to the management process
MM7 Conservation Measures for the LIFE BaHAR 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.	Conservation measures developed targeting Annex I cave and reef habitats.	<ul style="list-style-type: none"> • Outcome dependent on ongoing design processes and consultations
MM8 Contribute to on-going initiatives and seek opportunities to raise public awareness of project results, using material produced by the project, including maintenance and updating of the project website.	Events shall be identified that would be relevant to marine conservation and information material produced proved as requested/deemed necessary.	<ul style="list-style-type: none"> • Minimum of 10 events/initiatives at which awareness material aired/disseminated • 15,000 leaflets & 500 copies of the Layman's Reports disseminated • 6,000 website visits (following project completion) • 10 press releases/articles/interviews
MM9 Promote and incentivise courses/lectures on deep-sea and cave biology, ecology, conservation and management at UoM-DoB.	Courses held/inclusion of relevant topics in lectures given as part of undergraduate/postgraduate study-units.	<ul style="list-style-type: none"> • 5 study units including lectures on relevant topics • Minimum of 30 students attending these units
MM10 Contribute to the development of guidelines (e.g. code of conducts) for activities within the MPAs in order to reduce potential impacts.	Guidelines/Codes of conduct disseminated.	<ul style="list-style-type: none"> • Minimum of 200 units produced for physical dissemination • Minimum of 3000 persons reached via online (email/social media) communication
MM11 Reducing the impact from ALDFG through investigating, encouraging and facilitating the use of proven/viable alternative designs/materials, where appropriate, across as many fishing gear types as possible and/or applicable.	Alternative methods explored.	<ul style="list-style-type: none"> • Alternatives will be investigated for a minimum of 4 different fishing methods

<p>MM12 Initiating an initiative/campaign to reduce litter inputs into the sea from fishing and aquaculture activities, including conducting a scoping exercise to delineate sources and respective significances.</p>	<p>Identification of input-sources through scoping exercise. Communications with fishers and businesses.</p>	<ul style="list-style-type: none">• Scoping exercise outcome• Communication plan will depend on the scoping exercise findings
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6. Financial section

Table 6.1 shows a summary of incurred costs in the project from the beginning of the project till 30th June 2018 in comparison with the original budget, i.e. that in the Grant Agreement (GA).

Table 6.1: Project costs incurred by cost category

	Cost category	Budget according to the Grant Agreement (€)	Costs incurred within the project duration (€)	% by budget line
1	Personnel	902,668.00	1,050,559.08	116.4
2	Travel and subsistence	85,408.00	81,737.50	95.7
3	External assistance	1,274,559.00	1,129,816.13	88.6
4	Durable goods: total <u>non-depreciated</u> cost			
	<i>Infrastructure</i>	0.00	0.00	
	<i>Equipment</i>	8,800.00	4,030.25	45.8
	<i>Prototype</i>	0.00	0.00	
5	Land purchase / long-term lease	0.00	0.00	
6	Consumables	28,951.00	42,356.41	146.3
7	Other Costs	141,493.00	168,944.22	119.4
8	Overheads	170,931.00	125,421.97	73.4
	TOTAL	2,612,810.00	2,602,865.56	99.6

The total costs incurred by the LIFE BaHAR for N2K project amount to €2,602,865.56, equivalent to 99.6% of the budget in the GA.

Hence, the overall project costs are within the total budget allocated in the GA.

However, the actual costs in the Personnel, Consumables and Other Direct Costs cost categories exceeded those allocated in the GA. Conversely, there were savings in the External Assistance, Durable Goods and Travel & Subsistence cost categories.

Spending by cost category, compared to the GA budget per cost category, was approximately 116% (Personnel Costs), 96% (Travel and subsistence), 89% (External Assistance), 46% (Durable Goods - Equipment), 146% (Consumables) and 119% (Other Costs).

It should be noted that although the costs incurred in the Consumables and Other Costs categories are more than 10% of the GA budget, the actual amounts are approximately €13,400 and €27,450 respectively, and hence are below the €30,000 threshold indicated in Art. 15.2 of the CPs. The additional costs are primarily due to survey related costs.

In the case of Personnel, the real costs incurred are approximately 16% more than budgeted in the GA, which amount is equivalent to approximately €148,000. The additional costs are due to a combination of factors, including an underestimation of the project management needs and the technical input required for various deliverables; increases in salaries from the time when the budget was prepared in 2012, as well as incorrect rates utilised at project development stage; staff assigned to the project - due to delays in recruitment, staff turnover or changes in the organisational structure - having higher grades/salaries than envisaged in the GA.

Savings in the External Assistance cost category (equivalent to approximately €144,700), and were primarily due to savings by Oceana in relation to the ROV rental in 2015 and 2016 and non-claiming by Oceana of the costs relating to the rental of the research vessel *Oceana Ranger*. In addition, there were savings by ERA in relation to various Public Awareness deliverables and the independent audit; and savings by MESDC-DFA in relation to purchase of data, equipment and various costs linked to action A8.