

# 1. INTRODUCTION

Endangered populations of loggerhead (*Caretta caretta*) and green (*Chelonia mydas*) marine turtles in the Mediterranean are recovering, thanks to decades of devoted conservation work at nesting sites. Nevertheless, marine turtles still face persistent threats throughout the region - from tourism, coastal infrastructure development, illegal and accidental capture, and climate change. The survival of these migratory species and their important coastal and marine habitats depends on continued intervention, especially international collaboration with shared protocols and joint conservation activities.

Since 2017, a coalition of ten key partners throughout the Mediterranean have worked to ensure the protection of marine turtle populations and habitats by protecting priority breeding sites and reducing mortality related to human activity in and around those sites.

## OBJECTIVES

Working in priority areas for marine turtles and using a variety of tools and approaches, the partnership strove to achieve the following results by 2022:

- Partnership functioning is optimised, the partnership is known, and fundraising and communication tools for partnership sustainability are developed.
- Knowledge is enhanced, using current and new technologies, on nesting and foraging sites, stranding causes, and the effects of climate change on nesting sites and hatchlings.
- Good data are accessible and transcribed into conservation priorities through advocacy and protection actions.
- Key regional policymakers are aware of marine turtle issues and National Action Plans (NAPs) for marine turtle conservation are adopted and implemented.
- Primary threats to nesting marine turtles and their breeding habitats are identified and a path is drafted to address them, providing clear guidance on key measures for effective protection of nesting areas.
- Stakeholders responsible for nesting site management have the knowledge and skills to apply good management and relevant conservation measures.
- At least 50% of the nests on the monitored beaches have produced successful hatchlings, an indication of favourable nesting conditions.

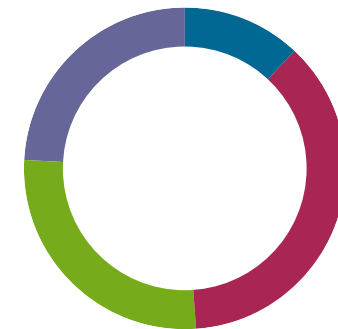
## PARTNERSHIP

## BUDGET ENGAGED

€2,800,000

## BUDGET PER STRATEGY

- Sustainable Partnership 12%
- Improving Knowledge 37%
- Policy Framework and Buy-In 27%
- Scaling Up Site Protection 24%



## FIELD SITES

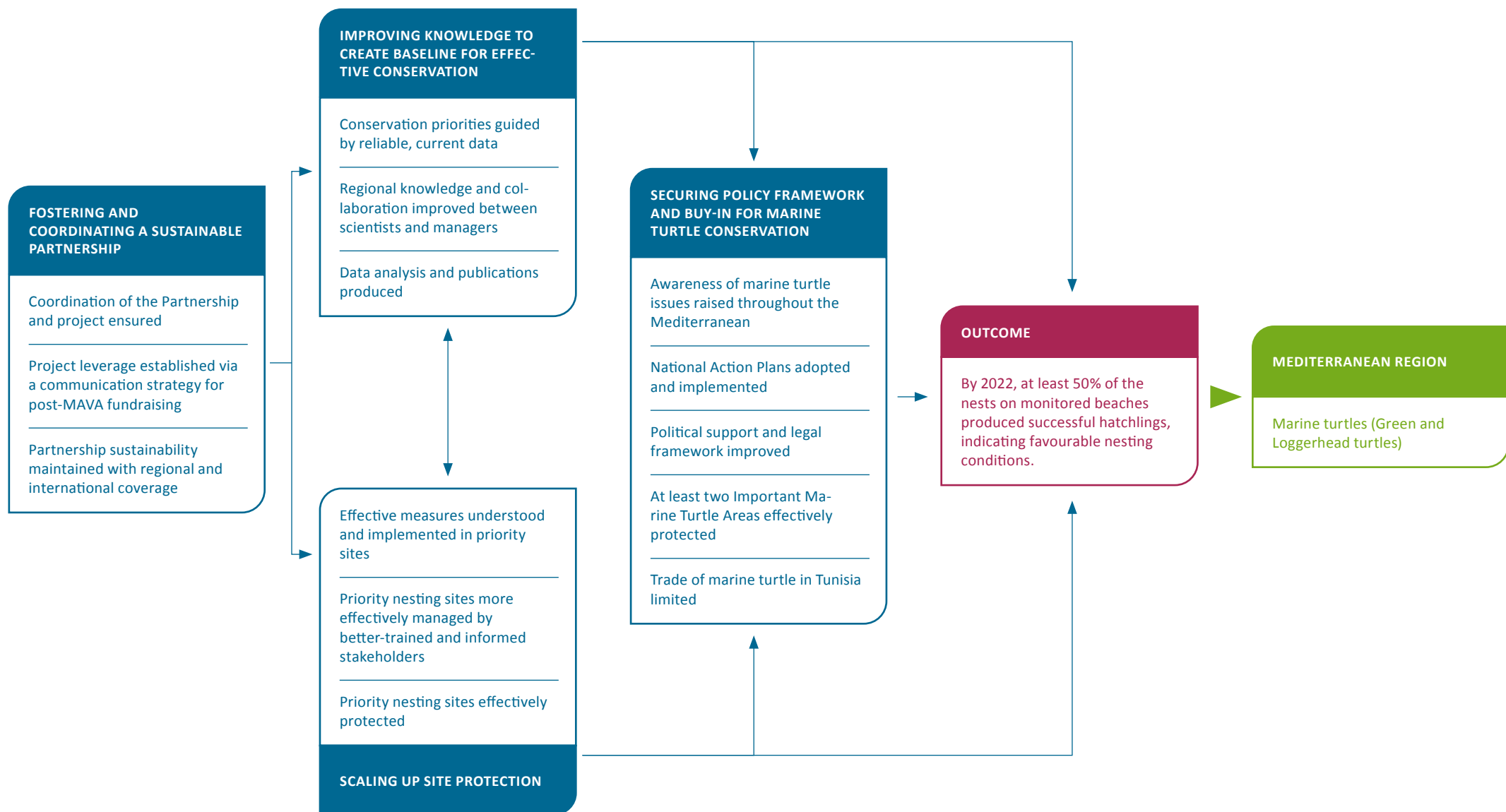


- Zakynthos, GREECE
- Kefalonia, GREECE
- Kyparissia Bay, GREECE
- Rethymnon, GREECE
- Dalyan, TÜRKIYE
- Patara, TÜRKIYE
- Çıralı, TÜRKIYE
- Akyatan, TÜRKIYE
- West Coast, CYPRUS
- Alagadi, CYPRUS
- Rónas, CYPRUS
- Tyre Coast, LEBANON
- Syrte, LIBYA
- Farwah, LIBYA
- Kuriat, TUNISIA

## IMPLEMENTED BY



We would also like to acknowledge all other collaborators that contributed to the success of this project: International Union for Conservation of Nature- Marine Turtle Specialist Group (IUCN MTSG), Egyptian Environmental Affairs Agency (EEAA, Egypt); Ministry of Environment (Algeria, Lebanon, Libya, Tunisia); Haut Commissariat aux Eaux et Forêts et à la Lutte Contre la Désertification (HCEFLCD, Morocco); Agency for Protection and Development of the Littoral (APAL, Tunisia); National Institute of Marine Sciences and Technologies (INSTM, Tunisia); Regional Administration for Protected Areas (Albania); SeaTuMed (Tunisia); Notre Grand Bleu (Tunisia); Asociación Herpetológica Española (AHE, Spain); Association de Protection des Tortues Marines (Morocco)





## 2. PROGRESS AND ACTIVITIES

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We based the implementation of action plan strategies on an innovative, multi-level, decentralised approach. This encouraged open discussions which fostered productive exchanges and the contribution of expert analyses and research, and provided a framework for each partner to conduct site-specific conservation work. Strategies were implemented at local, national, and regional levels across the Mediterranean, tailored to the capacity and expertise of each partner, and considering the requirements and scope of each different area. We used shared methods, such as nest and sand temperature measurements, to carry out joint studies to provide standardised, high-quality data for the development of effective conservation strategies, management measures, and advocacy.

### STRATEGY 1: FOSTERING AND COORDINATING A SUSTAINABLE PARTNERSHIP

To ensure continuous internal and external information exchange, the partnership coordination team used regular meetings to assess and adaptively manage project progress. Our activities included:

- organising regular steering committee meetings to allow for joint management decisions and to build trust among partners;
- developing a mechanism to share the data collected throughout the project;
- maintaining a continuous exchange of information within and outside the partnership;
- developing a communication and fundraising strategy.

### STRATEGY 2: IMPROVING KNOWLEDGE TO CREATE BASELINE FOR EFFECTIVE CONSERVATION

To improve knowledge about nesting, key marine habitats, and the effects of climate change and human activities on marine turtles, we used current and new technologies, improved data accessibility and transcribed this knowledge into conservation priorities. Our activities included:

- sharing and implementing unified protocols;
- data collection with new technologies including nest site and stranding monitoring with drones, satellite tracking to identify key marine habitats, incubation temperature measurement, and genetic connectivity study among populations;
- supporting criteria development and processing for Important Marine Turtle Areas (IMTA) led by IUCN Marine Turtle Specialist Group;
- joint scientific publications.

### STRATEGY 3: SECURING POLICY FRAMEWORK AND BUY-IN FOR MARINE TURTLE CONSERVATION

To shift attitudes, involve communities, and secure and increase recognition and support for marine turtle conservation, we engaged with a broad array of stakeholders at regional, national, and local levels. We also disseminated information on priorities for threats and hotspots. Our activities included:

- improving legal framework and political support of marine turtle conservation by integrating the collected project data into specific policy recommendations at national and regional levels;
- developing or updating marine turtle National Action Plans for adoption in 10 countries;
- developing a shared communication strategy using standard and innovative digital communication tools such as podcasts, publications, a documentary, and joint international, national, and local events;
- implementing awareness-raising activities to reduce illegal marine turtle trade in Tunisia.

### STRATEGY 4: SCALING UP SITE PROTECTION

To scale up protection and exchange knowledge on best practices on new nesting sites, the partnership identified existing examples of effective site protection and used them as templates. Our activities included:

- capacity building at site, national, and regional levels, including developing guides, providing online and face-to-face training programmes, and creating training centres;
- supporting and organising international exchange visits between stakeholders from different areas;
- employing new technology - such as cameras in Zakynthos to monitor nest predation, Geographic Information System (GIS) for beach vegetation mapping in Akyatan, and throughout a mobile phone application for citizen science, and innovative methodologies such as adaptive management;
- elaborating sustainable marine turtle monitoring schemes, operational post-2022, in two priority areas (Tyre coast nature reserve, Lebanon, and Syrte and Fawa area, Libya).

## KEY LESSONS

Implementing the action plan has provided a wealth of insights:

1. Do not give up on areas with geopolitical issues. Marine turtles do not recognise geographic boundaries and it is possible to make a difference in some key habitats located in challenging conflict areas.
2. Be realistic and mindful of context when setting objectives. Some of our goals were simply too ambitious or too dependent on external factors like policy and legal framework.
3. Collaboration and trust among partners and local stakeholders are fundamental to a successful partnership. The considerable effort we put into relationships was key to achieving our goals.
4. In an international context such as the Mediterranean, communication should be driven through a dedicated task force to ensure outreach in all countries.
5. Adequate human resources are key to efficient operations. Effective coordination of our partnership was ensured thanks to two staff working part-time (Technical Coordinator, Financial and Administrative Assistant) as part of the coordination unit, supported by at least one contact point per partner organisation.
6. Flexibility allows partners to adapt successfully when confronted by situational, national, or local needs. Crisis situations will arise and can be taken in stride. For example, during the COVID-19 pandemic, we continued our work with online trainings.
7. Creating synergies avoids duplication and strengthens collaborations. We worked productively with other projects related to marine turtles, such as the LIFEMedTurtle, Integrated Monitoring and Assessment Programme (IMAP).

### 3. ACHIEVEMENTS AND IMPACTS

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We are proud of the successful establishment of a strong, long-term partnership in the Mediterranean with 10 partners working throughout the region to sustain conservation of marine turtles while building continuous, strong communication to drive long-term impact.

More than 7,000 nests were monitored throughout the Mediterranean annually, at known critical nest sites where numbers were previously uncertain, and in new regular and non-regular (sporadic) nesting sites. Innovative, unified techniques helped to increase knowledge on genetic diversity and habitat use and pinpoint conservation priorities. For example, over 50 green and loggerhead turtles were tracked to identify and designate important habitats, while nest incubation temperature data collected across nesting sites provided a baseline to understand resilience of marine turtles to climate change.

Good practices implemented in Marine Protected Areas (MPAs) in Dalyan (Türkiye), Zakynthos (Greece), Alagadi (Cyprus), and Kuriat (Tunisia) (for an example, see [case study 1](#)) were scaled-up to other critical nesting sites<sup>1</sup> in the Mediterranean. In particular, nest monitoring and protection were greatly improved in Albania, Algeria, Cyprus, Egypt, Lebanon, Libya and Tunisia, providing a baseline to measure the impact of our future activities. In terms of capacity building for marine turtle conservation practitioners, we established dedicated training programmes (e.g. permanent training centre in Zakynthos) and developed valuable tools (e.g. monitoring and management guides). Furthermore, we created or improved strandings networks in seven countries.

We prepared resources and fostered capacity to support international, regional, and national policies throughout the project - elaborating, reviewing, or adopting 10 National Action Plans (Albania, Algeria, Egypt, Greece, Lebanon, Libya, Morocco, Spain, Tunisia, Türkiye). We achieved significant shifts in stakeholder attitudes by increasing public and sectoral meetings and workshops.

<sup>1</sup> Ronas & West Coast (Cyprus), Kyparissia Bay, Rethymno & Kefalonia (Greece), Tyre Coast (Lebanon), Syrte & Farwa (Libya), Akyatan, Patara & Çirali (Türkiye)



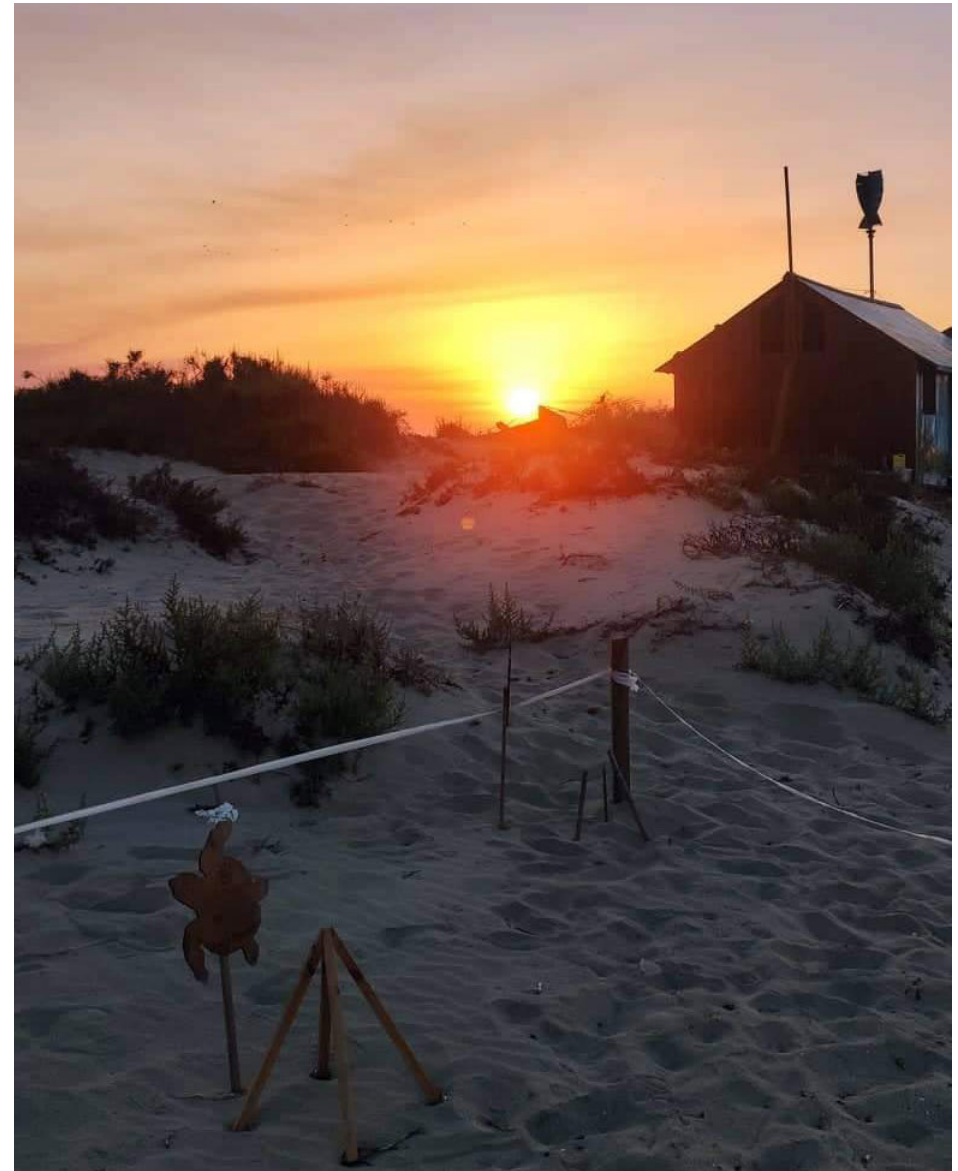
## CASE STUDY 1: KURIAT ISLANDS: A CO-MANAGEMENT MODEL IN TUNISIA FOR THE MEDITERRANEAN

With some 27,000 people visiting the 1,500 meters of authorised beach during nesting season, the Kuriat Islands face a major challenge in monitoring, managing, and protecting marine turtle nests. Given this, institutional entities, NGOs, and local communities became involved in implementing the management plan for monitoring marine turtle nesting and human impacts.

Carefully collected data shows that the number of recorded loggerhead nests in the islands increased from 20 in 2017 to 52 in 2022, providing a strong scientific argument to support the Kuriat Islands designation as a Marine and Coastal Protected Area.

This data also helped decision-makers update the area management plan, a process led by the Regional Activity Centre for Specially Protected Areas (SPA/RAC) with strong community involvement. The documents and videos collected provide an excellent case study for replication in other priority sites, like the Syrte coast in Libya and Tyre coast nature reserve in Lebanon.

Protection of loggerhead turtle nest on the small Kuriat island  
© Arij Sadraoui (Notre Grand Bleu)



## CASE STUDY 2: GREEN TURTLE TRACKING REVEALS CRITICAL RELIANCE ON LAKE BARDAWIL, EGYPT

In Cyprus, we expanded the Society for the Protection of Turtles (SPOT) systematic beach monitoring exercise with tracking to include an important area for the species - the Karpaz Peninsula. Tracking marine turtles provides data on the relative importance of nesting sites in the Mediterranean and the location of critical, non-nesting habitats. This study of twenty green turtles nesting in Karpaz uncovered the importance of Lake Bardawil for marine turtle conservation.

Indeed, in Karpaz, we discovered that, beginning in the 1990s, average annual nest numbers had increased from 186 to 554 nests (198%). Surprisingly, 74% of nesting females migrated to forage in Lake Bardawil, Egypt, a recently modified lagoon, which needs to be regularly dredged to maintain access for turtles.

The results, published in [Global Ecology and Conservation](#), delivered data that will inform national and regional policy, as they indicate a concerning pattern of reliance on Lake Bardawil which may not be sustainable. This is just one example of how international collaboration is needed to effectively monitor and protect marine turtles, due to their movements across broad regions.

SPOT project coordinator Damla Beton attaches a FastGPS tracker to a nesting green turtle during the project.  
© Olkan Ergüler



### KEY IMPACTS

1. We implemented consistent monitoring at nesting sites where information was previously missing, thanks to capacity building activities and resources provided by the project in Albania, Algeria, Cyprus, Egypt, Lebanon, Libya, Morocco, Tunisia.
2. We acquired baseline data for future activities – recording an average of 65% of nest hatching emergence success at important sites in Cyprus, Lebanon, and Tunisia, which is in line with other long-term studies conducted in Greece and Türkiye.
3. We contributed to the creation and involvement of local networks like SeaTuMed in marine turtle conservation to increase community engagement and help ensure lasting conservation efforts.
4. More than 200 MPA practitioners, including at least one member from each major MPA nesting site in the Mediterranean, received state of the art management training.
5. We identified previously unknown and critically important nesting and foraging sites that will now receive priority for protection status based on scientific data collected throughout the project (habitat use through tracking methods, genetic diversity, etc.). For an example, see [case study 2](#).
6. We contributed to the adoption of a new regulation in Monastir, Tunisia, to help reduce the illegal trade of marine turtles in the region.
7. Our digital communications reached over 1 million people, while 25,000 people participated in in-person events and workshops.

## 4. WHAT WILL HAPPEN NEXT

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The partnership will continue working towards our visionary goal: *'Thriving populations of marine turtles at sea and on land in the Mediterranean supported by a recognised and strong partnership.'*

Going forward, to achieve effective Pan-Mediterranean marine turtle conservation, we will include new partners and expand into other areas of the basin important to marine turtles. Basing our future work on past successes, we will focus on three pillars: monitoring & research, effective communication, and expert action to mitigate threats.

We are confident that our collaborative approach will prove to be one of the pioneering examples for marine turtle conservation worldwide. Our synergies increased impact in research, management, awareness, and advocacy, and reduced some of the direct threats to marine turtles such as accidental capture or nesting habitat degradation.

Thanks to funding and support from the MAVA Foundation for the coordination of the partnership in the coming years, we are now in a strong position to continue our work and collaborate with other relevant initiatives, ensuring the conservation of marine turtles as they face the dual threats of climate change and human disturbance.

*“In this rapidly changing world, collaborative initiatives based on solid scientific knowledge are essential to ensure that these incredible prehistoric creatures fulfil their vital functions in thriving marine ecosystems.”*

Professor Dr. Paolo Casale (Co-chair | IUCN Species Survival Commission, Marine Turtle Specialist Group)

*“This partnership is proof that together we can achieve more. It has created a successful blueprint by merging the expertise of key actors of marine turtle conservation from the south and the north of the Mediterranean.”*

Prof. Dr. Mehmet Emin Birpınar (President of UNEP-MAP & Deputy Minister of Turkish Ministry of Environment, Urbanisation and Climate Change)



