

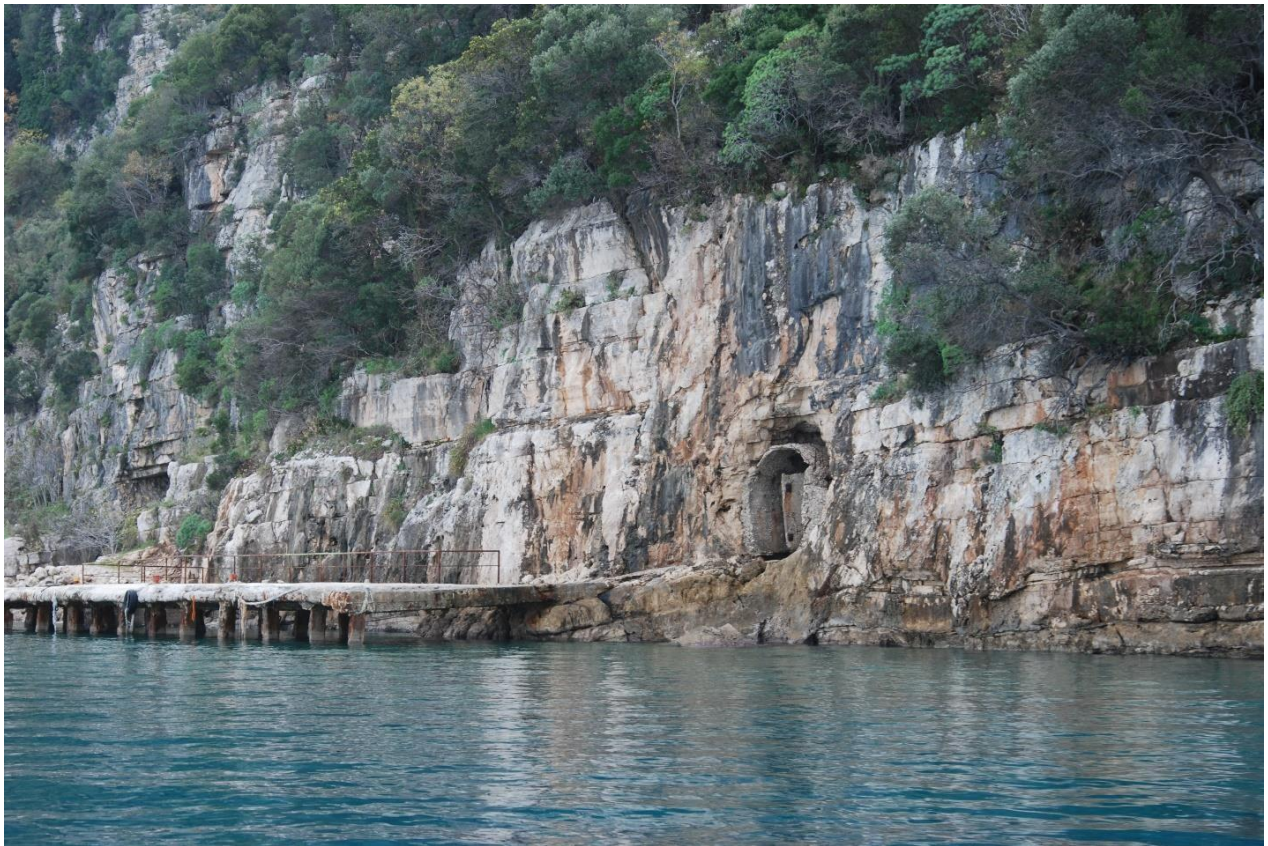


MONITORING REPORT

COMMON INDICATOR 16

IN

KARABURUN-SAZAN MPA



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I. Introduction

Nowadays the urbanization of the cities has reached its peak and due to the high demand the focus is being shifted to coastal natural areas. Aiming to achieve more and more economic profit and also aiming to develop furthermore activities such as tourism the artificialisation of coastal areas has taken place and new man-made structures are built such as marinas, docks, jetties etc. These coastal manmade infrastructures cause irreversible damage to landscapes, losses in habitat and biodiversity, and strongly influence the configuration of the shoreline. These artificial structures in the coastal fringe can disrupt the sediment transport, reduce the ability of the shoreline to respond to natural forcing factors, and fragment the coastal space. , Around 40% of the coastal zone of the Mediterranean coastline is under some form of artificial land cover, but yet there is still a deep lack of information regarding the actual level of this artificialisation. In order to assess the status of the Mediterranean coastline and understand the evolution of it and the impacts related to man-made structures a monitoring protocol is compiled under the framework of Barcelona Convention. Common Indicator 16, part of Ecological Objective 8 of IMAP, evaluates the length of artificial and natural coastline by measuring the length of coastline subject to physical disturbance due to the influence of man-made structures. There is no systematic monitoring in Mediterranean regarding coastal artificialization by now. The only country that has implemented the monitoring of the EO8 common indicator on a national level by this moment is Italy, with Montenegro and France performing similar inventories. Albania, as an under-development Mediterranean country, is currently facing the threats of the artificialisation of the coastline. Even though the impacts are seen and the consequences are obvious, there is still no official complete data on the level of the changes of the coastline, thus the implementation of the monitoring protocol of Common Indicator 16 is of major interests. An arising conflict is also the artificialisation of the coastline that is under protection regarding biodiversity, such as the system of natural protected areas in Albania, where there is a continuous pressure for building infrastructure as in the situation of Karaburun-Sazan MPA. In this case this indicator offers the possibility to evaluate through out the years the level of artificialisation and the consequences related to it thus it is recommended to perform this type of monitoring periodically in accordance with the monitoring protocol.

II. Description of study area

Karaburun-Sazan MPA, is the first national marine park in Albania and it is located in the southern part of the country. The protected area, II category of IUCN includes the marine area 1 mile from the shore around the Karaburun-Peninsula and Sazan Island. The park was proclaimed on 28.04.2010 by decision of the Council of Ministers, upon the proposal of the Minister of Environment, Forestry and Water Administration. The total proclaimed area of National Park Karaburun-Sazan was 12,570.82 ha, with marine area near Karaburuni having 9,848.95 ha and marine area near Sazani island having 2,721.87 ha.¹ Based on decision no.59, date 26.01.2022 “For the approval of the changes in the status and the surface of ecosystems of national parks of environmental protected areas” was approved the new status and surface of the national parks in Albania, including Karaburun-Sazan MPA. Respectively, the Marine National Park of “Karaburun-Sazan”, extended by 9.7 ha, with a total area of 12437,7, where 9712.95 ha around Karaburun Peninsula and 2724.75 ha around Sazan Island.

Having high values regarding history, culture and biodiversity, it consists in an area of great national and international importance. In the territory of the marine park are found species and habitats, which are listed on important conventions. Respectively 36 species of international importance are located in the territory of the park, moreover there are found 75% of the species of the Red List of Albania.²The main habitats located in the coastal area are those of *Posidonia oceanica*, *Cystoseira amentacea*, *Lythophyllum byssoides* which are also classified as conservation targets. The marine park hosts also important charismatic species such as monk seal *Monachus monachus*, sea turtle *Caretta caretta* and *Chelonia mydas* and dolphin *Delphinus delphis* and *Tursiops truncatus*. In order to provide protection for these biodiversity values and coordinate and regulate the activities developed within the territory of the MPA in 2015 was developed the Management Plan of Karaburun-Sazan National Marine Park. The management of the protected area is done based on the specifications on the management plan, where are specified the allowed, regulated and prohibited activities in coherence with the management zones. The management zones were re-defined based on new zoning model that was approved on 06.02.2019, with decision

¹ Karaburun-Sazan MPA Management Plan, 2015

² Karaburun-Sazan MPA Management Plan, 2015

no. 57 “On the criteria and zoning of the territory of a protected area”, where respectively the marine park includes the following zones³ (Figure 1):



Figure 1. Zoning of Karaburun-Sazan National Marine Park (2022).

1) Core zone- includes the areas with the highest biodiversity values and the most important for the community and aims to achieve a territory undisturbed by human activities. This zone has the highest level of protection.

2) Traditional and sustainable Use Zone- allows the implementation of traditional activities that connect local community with the area and gives the possibility to visitors to not only explore but also learn about the traditional use of the area.

³ Decision no. 57 “On the criteria and zoning of the territory of a protected area”

3) Recreational Zone- which gives the possibility for the implementation of education, recreational activities in accordance with the functions of the protected area, ecological and natural values. This zone has third level of protection.

Other than the marine park, the terrestrial part of Karaburun peninsula is a protected area that falls under the IV category of IUCN with the status of Natural Managed Reserve. The Karaburun RNM is proclaimed in 27.07.1977 with a surface of 20,000ha. In 2022, based on the decision no. 60, date 26.01.2022 “For the proclamation of natural ecosystems, natural managed reserve/natural park, and for the approval of the status change of existing surfaces of protected areas of these categories” the surface of Karaburun RNM was re-evaluated in 17,490ha. In addition, the management zones were re-evaluated as in Figure 2⁴.

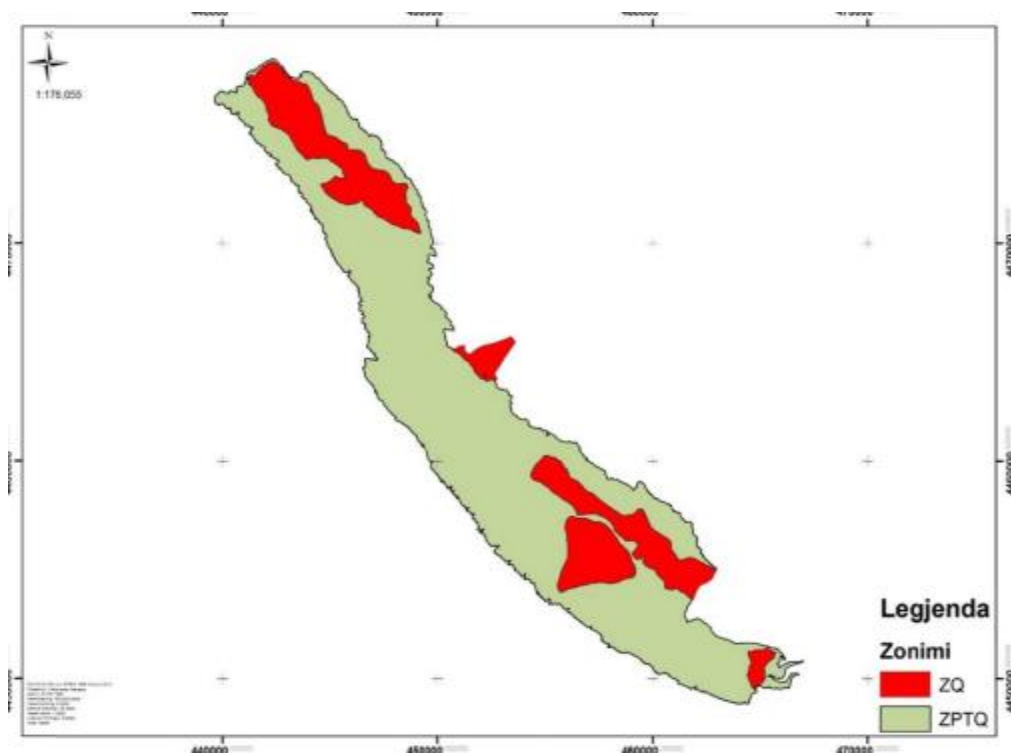


Figure 2. Zoning of Karaburun-Sazan Natural Managed Reserve (2022).

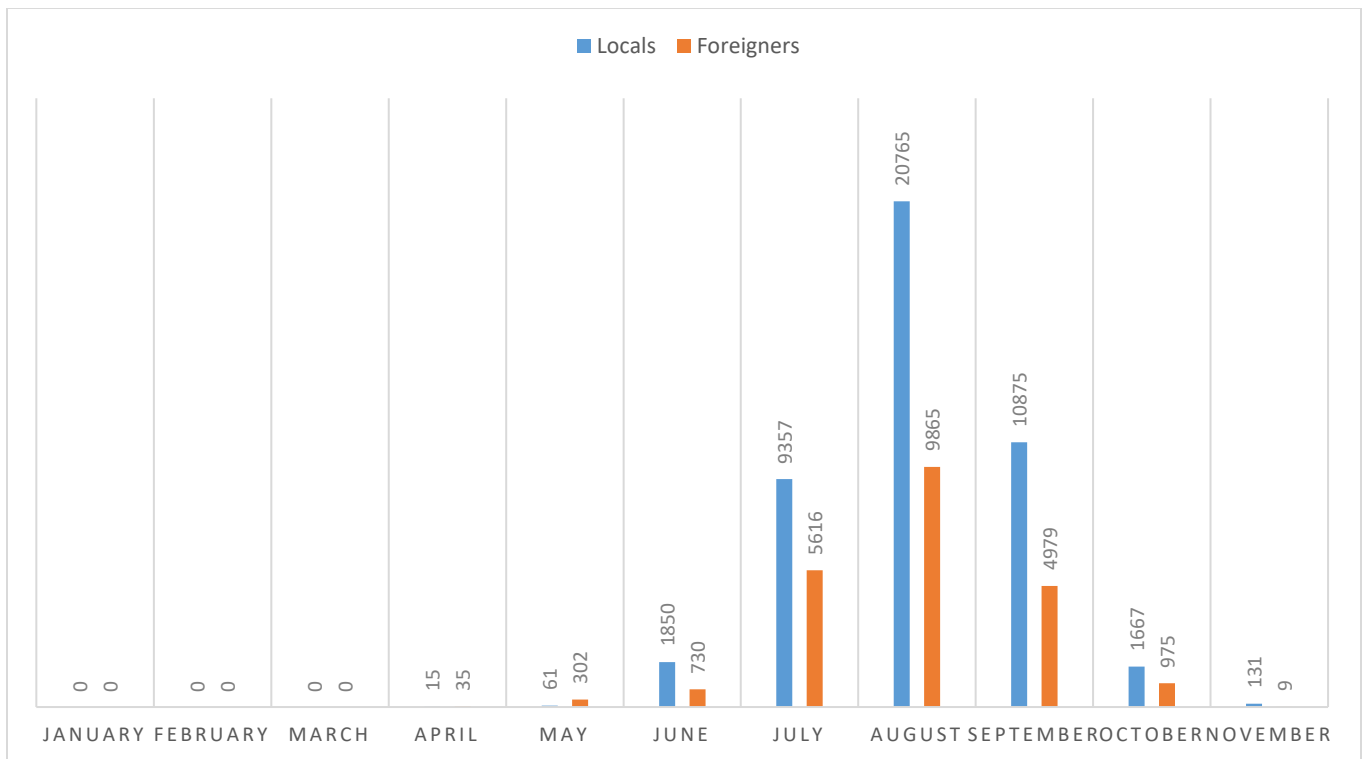
The Sazan Island, lies at the entrance to the Gulf of Vlora and is the largest island in Albania with an area of 5.7 km². Currently the island is a military base and as a result its is closed for the public most of the year and it opens only during the summer season from May to September. The island

⁴ Decision no. 60, date 26.01.2022

is considered as an abandoned city, which was built during the communism period. The best-known period of the island is after the 50s when it began to transform into a military naval base. The terrestrial part of the island isn't a protected area even though it has high biodiversity values.

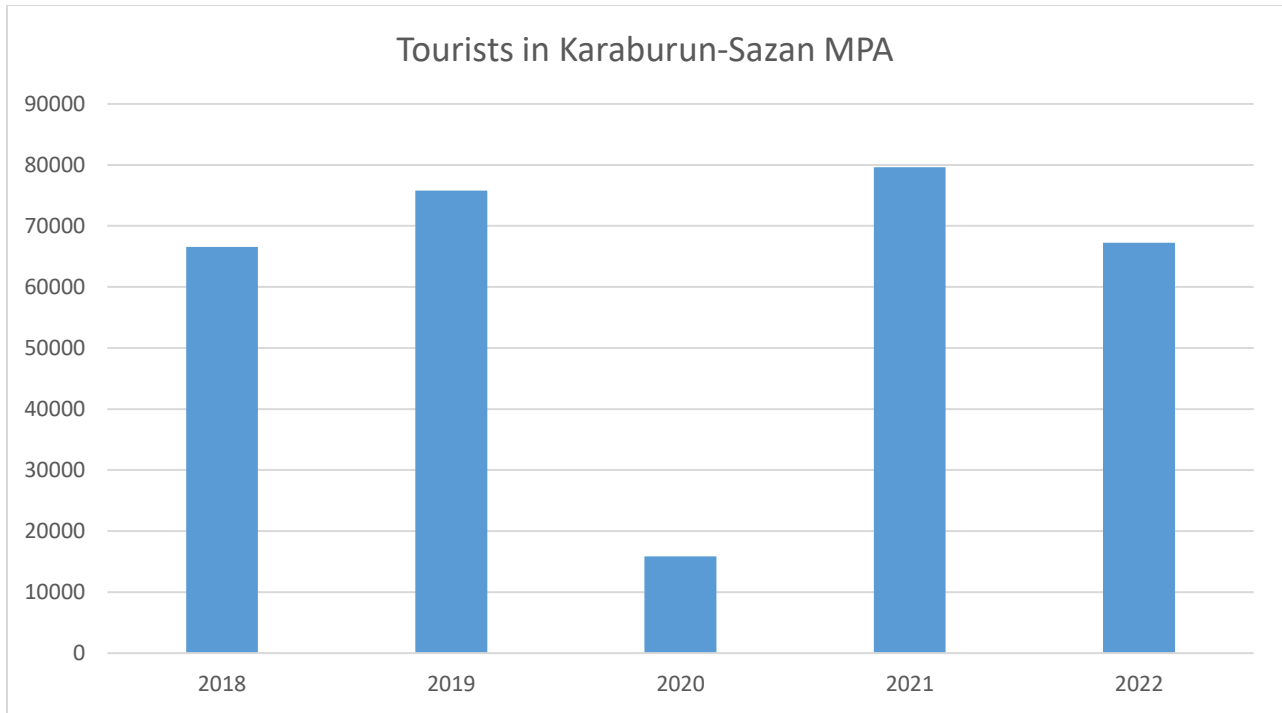
III. Actual situation and vision

Karaburun-Sazan MPA, is considered an area with a major economic potential for Albania, this supported mainly by the development of tourism activities. In the past years has been noticed a major income of local and foreign tourists in the national marine park, reaching 67,232 tourists in 2022 (Graph. 1), further more the highest number of tourists is in 2021, respectively 79, 636 tourists (Graph 2).⁵



Graph 1. Tourists in Karaburun-Sazan MPA during 2022.

⁵ RAPA Vlore



Graph 2. Trends in the number of tourists in Karaburun-Sazan MPA from 2018-2022.⁶

The Integrated Cross sectorial for Coast done by NATP in 2015, shows that the vision for the area of the marine park is listed as “local center specialized in tourism” (Figure 2)⁷. This vision and the development of the tourism sector is considered as positive in the economic point of view, but it has always a negative connotation in the biodiversity and environmental protection aspect.

⁶ RAPA Vlore

⁷ NATP 2015

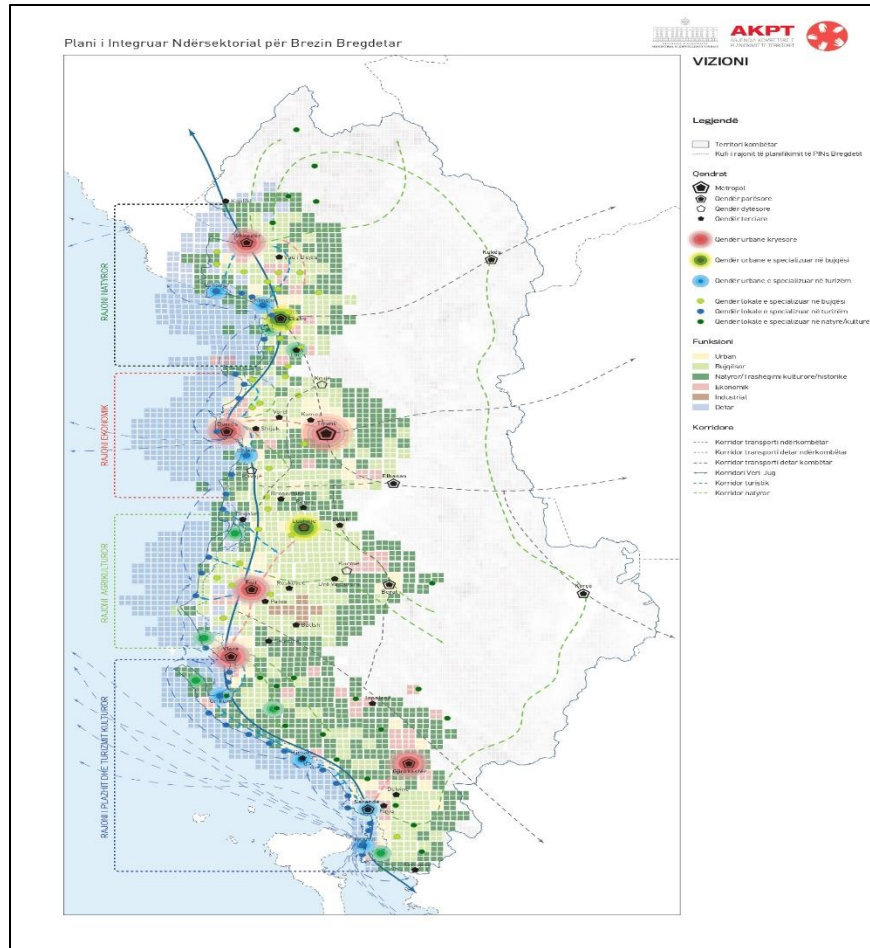


Figure 3. The vision for the development of coastal areas in Albania.

The data shown above, show that currently the number of tourists in Karaburun-Sazan MPA is above the carrying capacity of the MPA, resulting in several major environmental problems such as marine litter, habitat destruction etc.. The effects of such tourists flux become even stronger considering that there is no diversification of the destinations were these tourists are located and even more there is no diversification in the time range of when they visit these destinations.

Furthermore, the increase in the number of visitors and tourism activities requires the implementation and development of the adequate infrastructure that facilitates the ongoing of these activities. These type of man-made structures cause major problems in the costal area such as destruction of the landscape, loss of habitat and biodiversity, thus there always needs to be a coherence between the construction of these structures and the protection of nature. These man-made structures also affect the self-regulating cycles of the costal zone and also the sedimentation

process. Another factor strongly related to the changes in the natural structure of coastal areas is erosion. Vlora Municipality is endangered by marine erosion and coastal floods from the Vjosa estuary to Triport. Part of the Vjosa River Basin from the Vlora Municipality is endangered by river floods, while in the southern part of the city of Vlora, karst wells are endangered by the introduction of salt water from the sea. The coastal area is endangered by massive landslides.⁸As shown in Figure 3 the western part of Karaburun Peninsula is threatened from coastal erosion, thus the building of man-made structures can result fatal for the biodiversity and natural environment in the area.

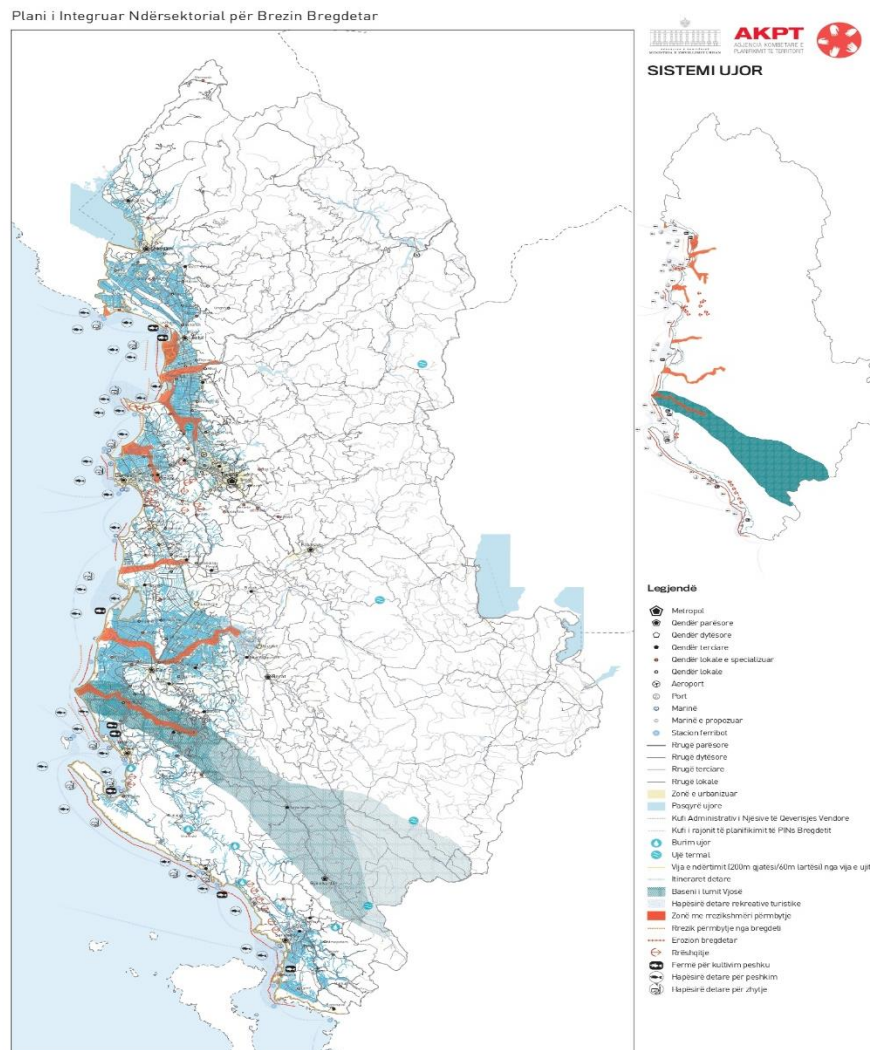


Figure 4. Evaluation of erosion in Albanian coastal areas.

⁸ NATP 2015, page 77

The pressure for urbanization on the coastline is high and this is obvious in the review of development plans for the Municipality of Himara, Vlora and Lezha which in 2020 have requested an increase in urban areas. There is a high pressure for construction, tourist resorts in the municipalities of Himara, Vlora and Lezha (Shëngjin) using agricultural land and natural system or protected areas.⁹ Currently the urbanization in the territory of the marine park consists only in the buildings built during the communism period and in some service points structures built after 2015, but the pressure for the urbanization is present, proved this also in the evolution of the present structures from the beginning until now.

Even though the law gives a clear definition of the surface of the MPA, the management zones and the activities to be implemented in the marine area, the lack of marine spatial planning and lack of a proper territorial planning that takes into account the existence of protected areas favors the urbanization pressures in the area.

III. IMAP and Common Indicators

In 2016, Karaburun-Sazan National Marine Park was proclaimed a Special Protected Area of Mediterranean Importance (SPAMI) which falls under the Barcelona Convention. This convention derives from overarching principles and the overall structure of the Integrated Monitoring And Assessment Programme Of The Mediterranean Sea And Coast And Related Assessment Criteria (IMAP) that Contracting Parties of the Barcelona Convention are encouraged to coordinate within and between each other in order to use resources in an efficient way. IMAP describes the strategy, themes, and products that the Barcelona Convention Contracting Parties are aiming to deliver, through collaborative efforts in the framework of the MAP Barcelona Convention.

The ultimate goal is to assess the status of the Mediterranean sea and coast, as a basis for enhanced action.¹⁰ The main important aspects or the backbone of the IMAP are its Ecological Objectives and the respective Common Indicators. In the context of the Barcelona Convention, a common indicator is an indicator that summarizes data into a simple, standardized, and communicable figure and is ideally applicable in the whole Mediterranean basin, or at least on the level of subregions, and is monitored by all Contracting Parties. A common indicator is able to give an

⁹ EcoAlbania-Mapping of environmental issues along the Albanian coastline

¹⁰ Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria UNEP/MAP Athens, Greece (2016)

indication of the degree of threat or change in the marine ecosystem and can deliver valuable information to decision makers.¹¹ The current IMAP covers the ecological objectives related to biodiversity (EO1), non indigenous species (EO2), eutrophication (EO5), hydrography (EO7), coast (EO8), contaminants (EO9), and marine litter (EO10).

Table 1. IMAP Ecological Objectives and Common Indicators

Ecological Objective	Common Indicators
Biodiversity (EO1)	<p>COMMON INDICATOR 1: Habitat distributional range to also consider habitat extent as a relevant attribute;</p> <p>COMMON INDICATOR 2: Condition of the habitat's typical species and communities;</p> <p>COMMON INDICATOR 3: Species distributional range related to marine mammals, seabirds, marine reptiles;</p> <p>COMMON INDICATOR 4: Population abundance of selected species;</p> <p>COMMON INDICATOR 5: Population demographic characteristics (e.g. body size or age class structure, sex ratio, fecundity rates, survival/mortality rates related to marine mammals, seabirds, and marine reptiles)</p>
Non indigenous species (EO2)	COMMON INDICATOR 6: Trends in abundance, temporal occurrence, and spatial distribution of non-indigenous species ,particularly invasive, non-indigenous species (IAS), notably in risk area
Eutrophication (EO5)	COMMON INDICATOR 13: Concentration of key nutrients in water column;

¹¹ Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria UNEP/MAP Athens, Greece (2016)

	COMMON INDICATOR 14: Chlorophyll-a concentration in water column;
Hydrography (EO7)	COMMON INDICATOR 15: Location and extent of the habitats impacted directly by hydrographic alterations
Coast (EO8)	COMMON INDICATOR 16: Length of coastline subject to physical disturbance due to the influence of man-made structures;
Contaminants (EO9)	COMMON INDICATOR 17: Concentration of key harmful contaminants measured in the relevant matrix (related to biota, sediment, seawater); COMMON INDICATOR 18: Level of pollution effects of key contaminants where a cause and effect relationship has been established; COMMON INDICATOR 19: Occurrence, origin (where possible), extent of acute pollution events (e.g. slicks from oil, oil products and hazardous substances), and their impact on biota affected by this pollution; COMMON INDICATOR 20: Actual levels of contaminants that have been detected and number of contaminants which have exceeded maximum regulatory levels in commonly consumed seafood; COMMON INDICATOR 21: Percentage of intestinal enterococcus concentration measurements within established standards;
Marine litter (EO10)	COMMON INDICATOR 22: Trends in the amount of litter washed ashore and/or deposited on coastlines;

	COMMON INDICATOR 23: Trends in the amount of litter in the water column including micro plastic and on the seafloor;
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IV. Common Indicator 16 monitoring protocol

a) Importance and value

Mediterranean coastal areas are particularly threatened by coastal development that modifies the coastline through the construction of buildings and infrastructure needed to sustain residential, commercial, transport and tourist activities. The land, intertidal zone and near-shore estuarine and marine waters are increasingly altered by the loss and fragmentation of natural habitats and by the proliferation of a variety of built structures, such as ports, marinas, breakwaters, seawalls, jetties and pilings. These coastal human-made infrastructures cause irreversible damage to landscapes, losses in habitat and biodiversity, and strong influence on the configuration of the shoreline. Indeed, physical disturbance due to the development of artificial structures in the coastal fringe can disrupt the sediment transport, reduce the ability of the shoreline to respond to natural forcing factors, and fragment the coastal space. The modification of emerged beach and elimination of dune system contribute to coastal erosion phenomena by lessening the beach resilience to sea storms. Coastal defense infrastructures have been implemented to solve the problem together with beach nourishment but preserving the natural shoreline system with adequate sediment transport from river has proved to be the best solution. Monitoring the length of coastline subject to physical disturbance due to the influence of human-made structures and its trend is of paramount importance to preserve habitat, biodiversity and prevent coastal erosion phenomena, as well as for its importance in land-sea interactions. Until now there has not been systematic monitoring in regarding this, in particular not quantitatively based monitoring or any major attempt to homogenously characterize coastal ecosystems on a wider Mediterranean basis.

b) Monitoring protocol

The monitoring of this Common Indicator entails an inventory of the length and location of human-made coastline (hard coastal defense structures, ports, marinas). Soft techniques e.g. beach nourishment are not included. With regard to the coastline to be considered: the fixed reference official coastline as defined by responsible Contracting Party should be considered.

The monitoring of this Common Indicator entails an inventory of:

- the length and location of manmade coastline (hard coastal defence structures, ports, marinas. Soft techniques e.g. beach nourishment is not included.
- land claim, i.e. the surface area reclaimed from the 1980's onward (ha); and
- the Impervious surface in the coastal fringe (100m from the coastline).


The optimal resolution should be 5 m or 1: 2000 spatial scale. Once a proper geographic scale has been established, monitoring should focus, in particular, on the location, the spatial extent and the types of coastal structures taking into account the minimum coastal length that can be classified as artificial or natural. The identification procedure of human-made structures should be carried on based on typical situations added to the indicator guidance factsheet, including the minimum size (length, width of human-made structures) to be taken into account. As monitoring should be done every 6 years, every CP should fix a reference year in the time interval 2000-2012 in order to eliminate the bias due to old or past human-made infrastructures. The length of artificial coastline should be calculated as the sum of segments on reference coastline identified as the intersection of polylines representing human-made structures with reference coastline ignoring polylines representing human-made structures with no intersection with reference coastline.


The minimum distance between coastal defense structures should be set to 10 m in order to classify such segments as natural, i.e. if the distance between two adjacent coastal defense structures is less than 10 m, all the segment including both coastal defense structures is classified as artificial. The total length of coastline influenced by human-made structures and the share of this coastline in total country's coastal length should be provided on a map showing the coastline subject to physical disturbance due to human-made structures (artificial segments) in red line and the rest (natural segments) in green line. The assessment output should be reported as a common shape file format with GRS as WGS84.


V. METHODOLOGY

The monitoring was conducted during November-December 2022 in the territory of Karaburun Peninsula and Sazan Island. The base for the monitoring is the monitoring protocol compiled by IMAP and also the relevant Guidance Fact Sheet for Common Indicator 16. A field visit around Karaburun Peninsula and Sazan Island was conducted and also Ortophoto from the National Authority for Geospatial Information and satellite imagery were used in order to identify the man-made structures.

The study area was focused in the first 100m from the coast. An inventory of the manmade structures in the costal area in direct contact with the sea and land was realized and later on analyzed and reflected using GIS. The areas where these man-made structures were located are considered as artificial and the areas where the man-made structures are not present are considered natural. Structures located inside the sea are considered irrelevant and are not represented in the final product. The information regarding the artificial and natural areas are shown in maps produced using GIS and are shown with the below symbols.

Red lines (): artificial coast area

Green lines (): natural coast area

Blue lines (): irrelevant structure

The monitoring was extended in three monitoring periods, 2007, 2015, 2022 and for each period was done an evaluation of the Common indicator 16 and a full inventory of the coastal infrastructure found. Photos from areas where changes were noticed were extracted with in 1:2000 spatial scale.

In addition, was completed a detailed inventory of man-made structures located with the 100m monitoring area, and were recorded data regarding the coordinates of this structures, surfaces and pictures for each of them.

The changes and the new infrastructure that is added along the 100m area throughout the years 2007, 2015, 2022 is reflected using areal images in 1:2000 spatial scale.

VI. RESULTS

6.1 Indicator 16. Natural and artificial coastal zone

The study shows that the Karaburun-Sazan marine park is subject to the artificialisation of the coastal area. The process of the artificialisation has continued throughout the years, even though most of the artificial structures were already built in the reference year 2007. In Table 2 are shown the types of the artificial structures and the respective information regarding them.

Table 2. Information regarding artificial coastal area structures in Karaburun-Sazan MPA.

No.	Man-made structure	Location	Coordinates (Longitude)	Coordinates (Latitude)	Length (m)
1	Dock	Shën Vasil	19.38065575	40.40184246	8
2	Tunel	Between Shën-Vasil	19.36272924	40.4159543	1
		Dhimkushtë			
3	Tunel	Between Shën-Vasil	19.36272924	40.4159543	1
		Dhimkushtë			
4	Dock	Shën Jan	19.33600986	40.4315647	11
5	Dock	Shën Jan	19.32884808	40.43209447	9
6	Dock	Shën Jan	19.32884808	40.43209447	13
7	Dock	Moli i Veriut	19.29554052	40.42412477	9
8	Dock	Brisan	19.37755852	40.31480145	15
9	Dock	Gjiri i Inglezit	19.43656169	40.2440218	4
10	Dock	Gjiri i Inglezit	19.43656169	40.2440218	5
11	Dock	Gramë	19.47311251	40.21610399	14
12	Dock /Jetties	Sazan	19.28539005	40.50198497	332
13	Dock	Sazan	19.28539005	40.50198497	8
14	Jettie	Sazan	19.28539005	40.50198497	20
15	Dock	Sazan	19.28527801	40.50194497	6
16	Dock	Sazan	19.28527801	40.50194497	3
17	Dock /Rock	Dhimkushtë	19.35705087	40.42210772	36

As shown in the Figure 5 the artificial structures, respectively, tunnel, docks, marinas and jetties for the year 2007 and 2015 are located in Shën Vasili Bay, the area between Shën Vasil and Dhimkushtë, Shën Jan Bay, Galloveci Cape, Moli i Veriut, Brisan Bay, Inglezi Bay, Grama Bay

and Sazan Island. In 2022, there is another intervention in the coastal area of Dhimkushta where the rock was transformed for the placement of umbrellas and also a dock was built for the anchorage of boats.

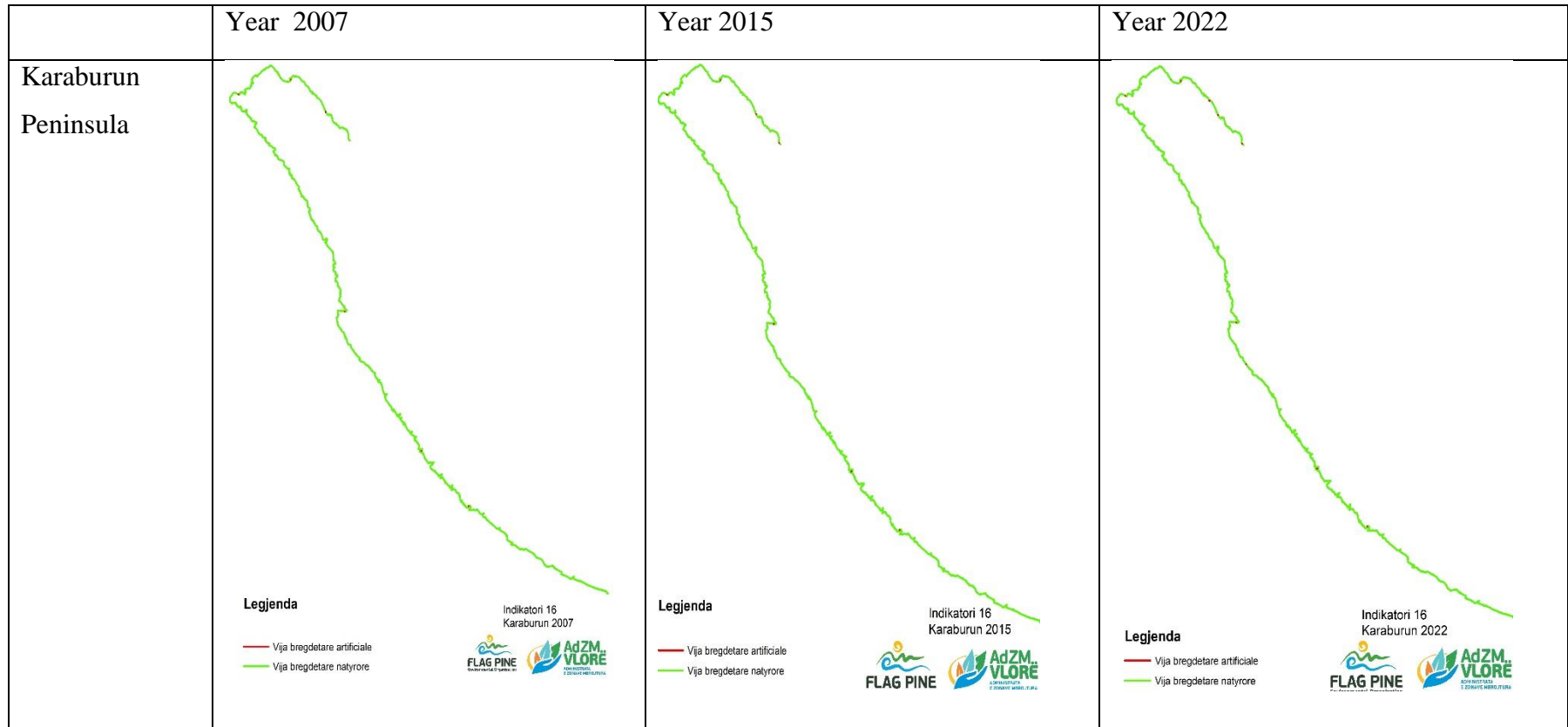




Figure 5. Indicator 16 in Karaburun-Sazan MPA for the year 2007, 2015, 2022

In total, for the years 2007 and 2015 the entire natural coastline for Karaburun Peninsula and Sazan Island makes up for 116.32km and the entire artificial coastline makes up for 0.46 km. Meanwhile in 2022 there is seen a change in the ratio off natural and artificial coastline, respectively the natural coastline makes up for 116.28km and the artificial coastline makes up for 0.49km. The changes in 2022 show a trend for the artificialisation of the coastline of the marine park as result of the increase in the number of tourists and the higher request for relevant infrastructure.

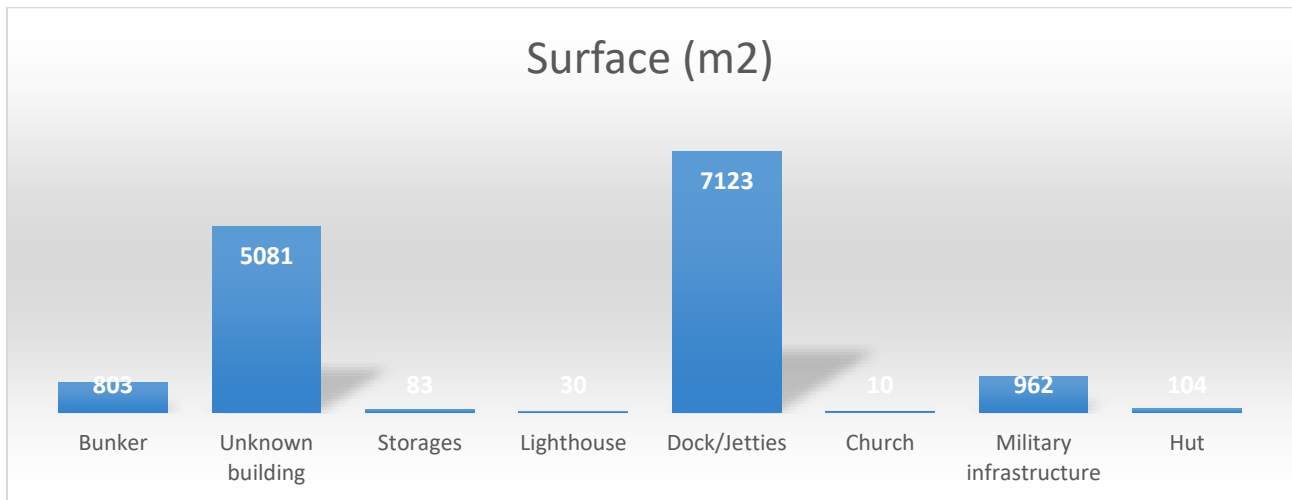
6.2 Man-made structures within 100m from the coast

Other than the monitoring of the man-made structures in the first line of the coast was also monitored the structures present within the 100m area from the coast. For all this structures there is detailed information in the Annex section. The buildings present in the territory of Karaburun peninsula and Sazan Island are from different periods, but most of them are built during the communism period. These structures, 148 in total, include bunkers, tunnels, storage buildings, military buildings (Figure 6).



Figure 6. Photos of man-made structures inside the 100m area.

Respectively the number of bunkers is 84, the number of docks and jetties is 15, the number of unknown buildings is 47, storage buildings 1, lighthouse 2, church 1 and hut 2. The surface of the land covered by this structures is shown in Graph 3 where the most of the land is claimed by buildings whose function isn't known by 5081m², moreover the highest surface covered is by docks and jetties, respectively 7123m².



Graph 3. Surface of the land covered by the man-made structures.

Another element that shows the anthropogenic impact is also the existence of a terrestrial road that is being used by the military base and management authorities for patrolling. The road, as seen in Figure 7 sometimes falls inside the 100m area and some times is out of it. All the man-made infrastructures are shown in the map in Figure 8.



Figure 7. The extension of the military road within the monitoring area.



Legjenda

- | | | |
|-----------------------------|------------------------|---------------|
| Vija bregdetare natyrore | Zona e Mbrojtur | Godina |
| Vija bregdetare artificiale | Zonë e Mbrojtur Detare | Bunker |
| Struktura në ujë | Bankinë/Mol | Postoblok |
| Zona e monitorimit | Tunel | Depo |
| Rruga Karaburun | Stan | Pikë shërbimi |
| Rrugë deri në 9m | Reparte | |
| | Kishë | |

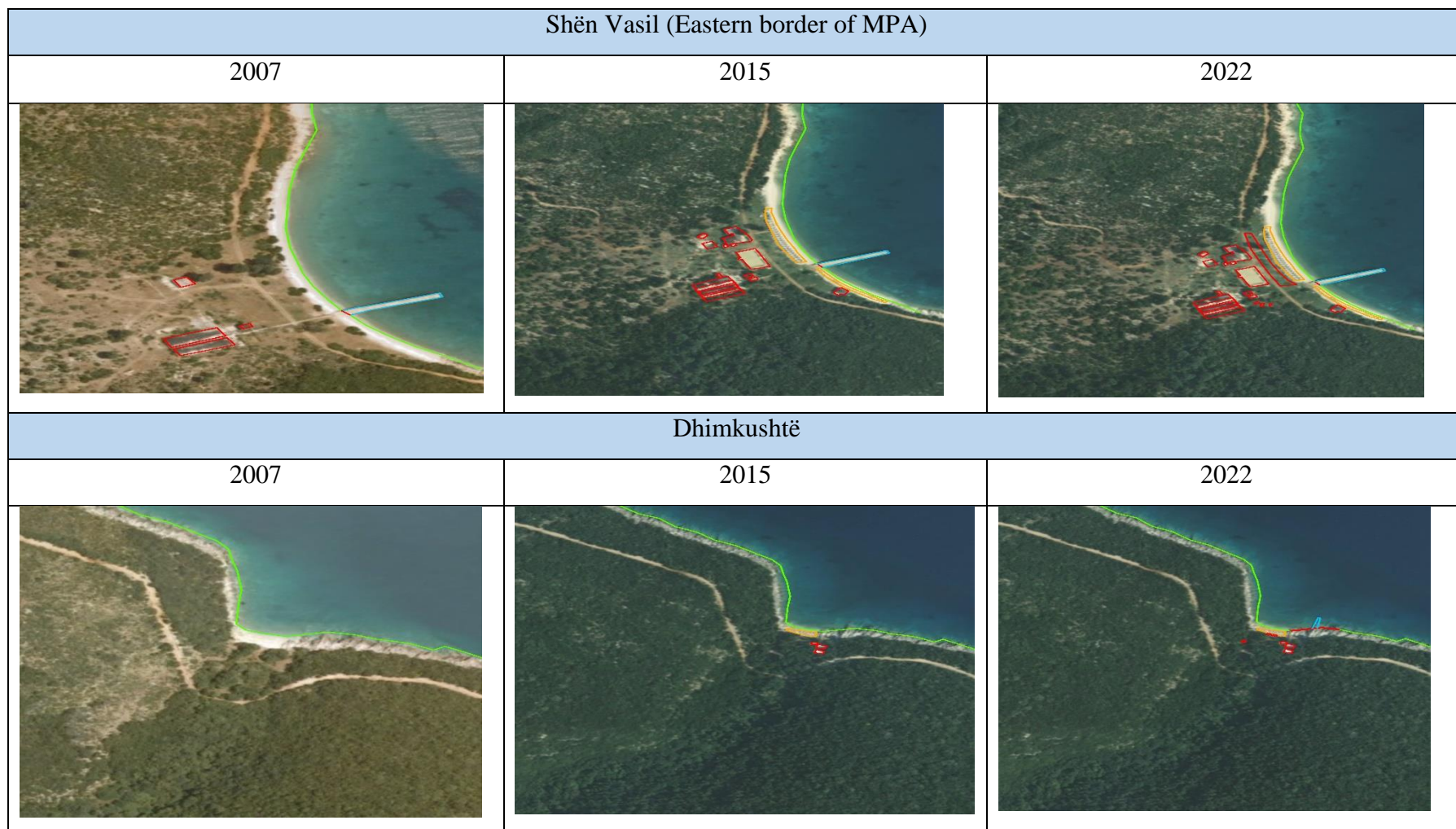
Indikatori 16-IMAP

Mbështetje Operacionale për Menaxhimin Efektiv të Parkut Kombëtar Detar Karaburun-Sazan



Figure 8. Map showing the distribution of all man-made structures inside the monitoring area

In 2015, which marks also the year of the proclamation of the marine park, the interest of the area for tourism activities arises and as a result, four service points were built in Shën Vasil Bay, Dhimkushta Bay, Shën Jan Bay and Grama Bay. At the beginning, as shown in Figure 9 the infrastructure in these service points was quite minimal but in 2022 the situation is much more different.






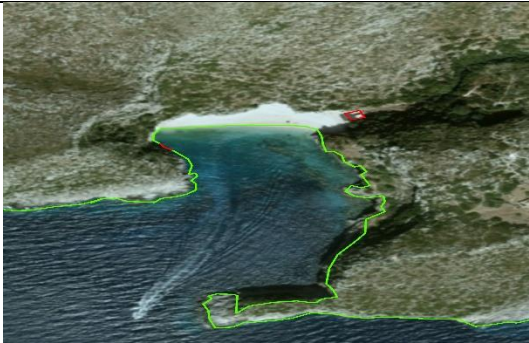
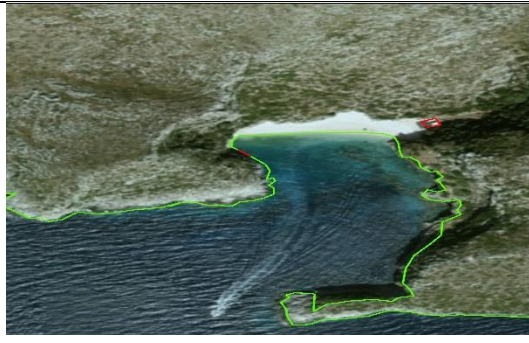
Shèn Jan		
2007	2015	2022
		
Grama		
2007	2015	2022
N/P		

Figure 9. Changes in the infrastructure of the beaches of Karaburun-Sazan MPA from 2007 to 2022.

Major changes are made in the beaches of Shën Vasil and Dhimkushtë meanwhile smaller changes are made in Grama Bay and Shën Jan Bay. Must be taken into consideration that Shën Vasil bay, located in the eastern side, is not part of Karaburun-Sazan MPA but due to its vicinity with the park is considered as part of it. In addition, another area that is located in the western border of the MPA, Palasa Bay has undergone major changes, shown in Figure 10. The changes noticed in these areas confirm even more the increased pressure for the artificialisation of the coastal areas.

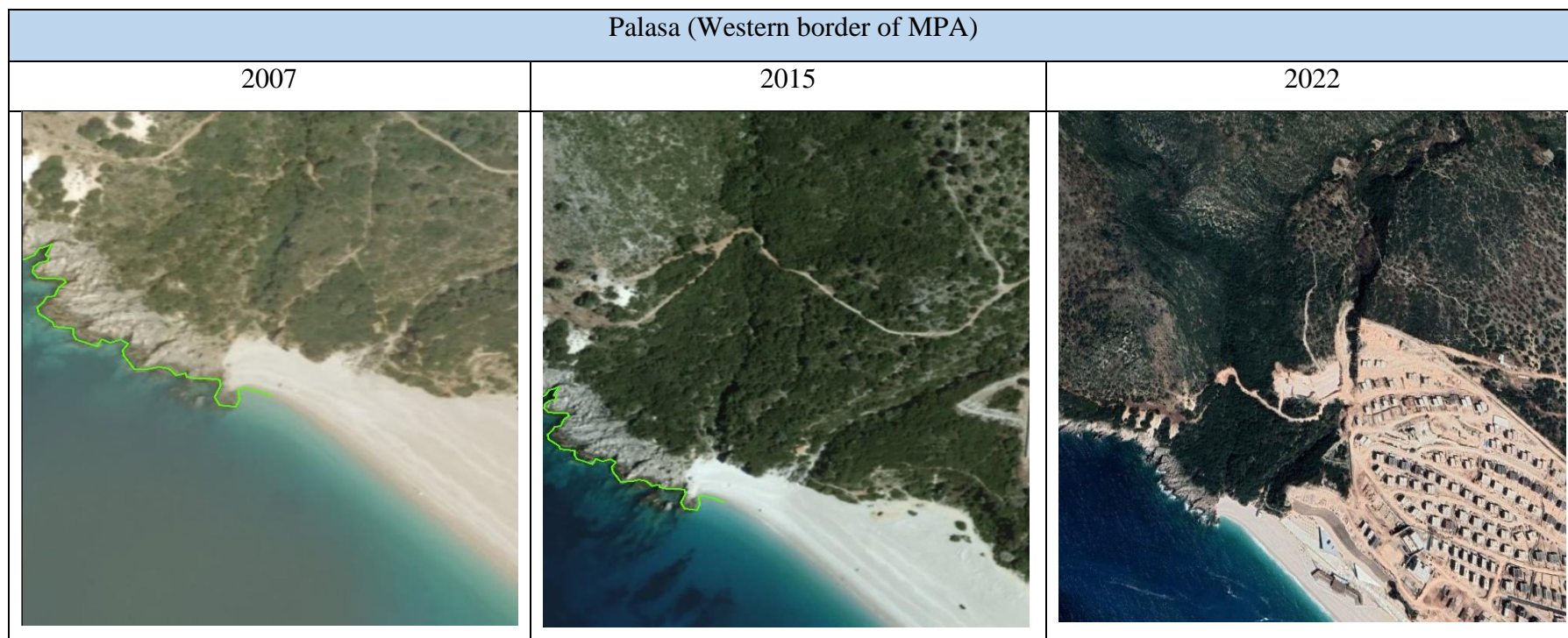
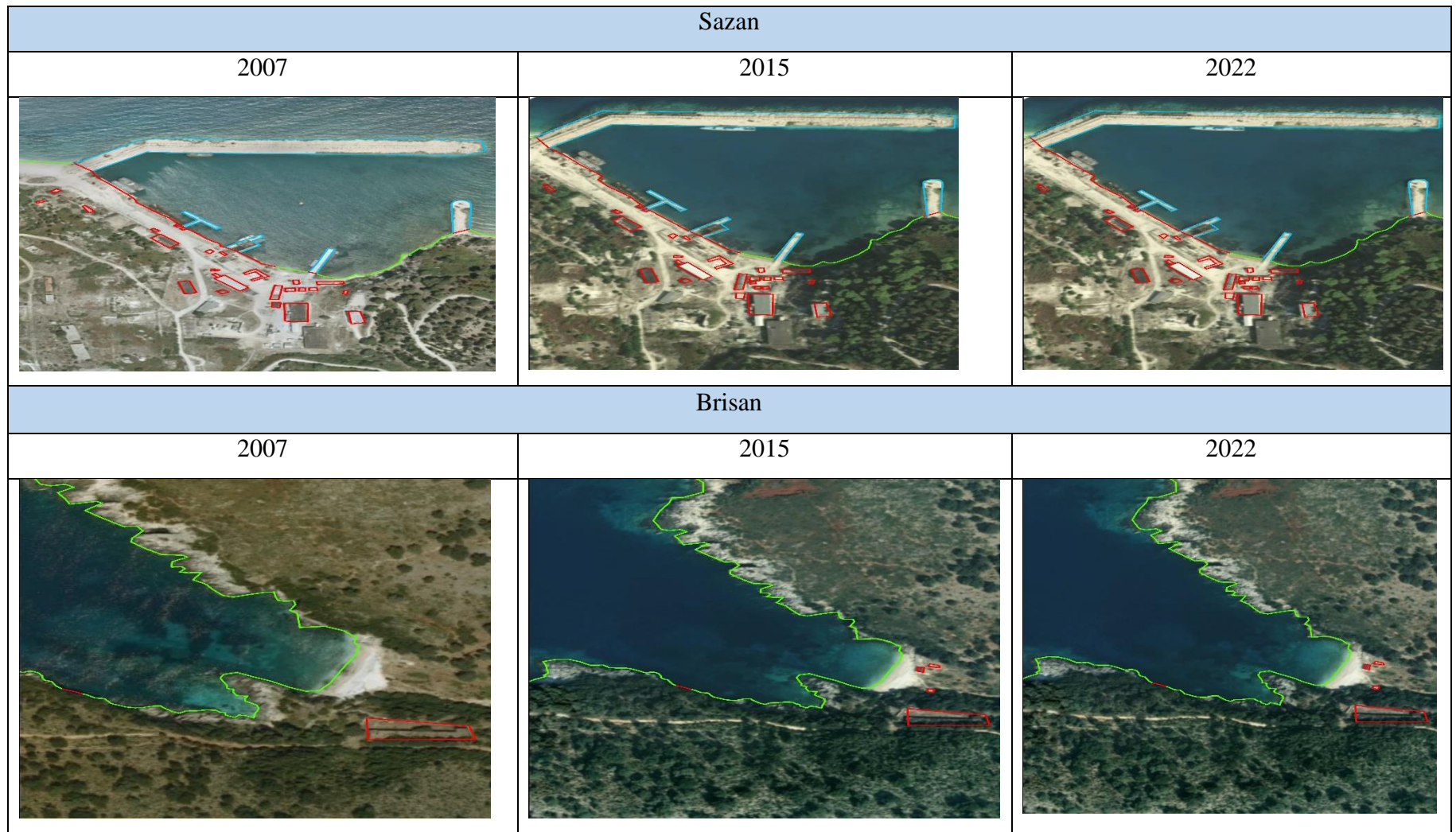


Figure 10. Changes in the infrastructure in the coastal area of the western border of the MPA.

In the other bays of the MPA, located in the western side of Karaburun Peninsula, the situation remains the same as during the communism period apart from Brisán bay where small infrastructure has taken place, as shown in Figure 11. In Sazan Island also there are not made major changes apart from some small building in the upper area of the monitoring zone.



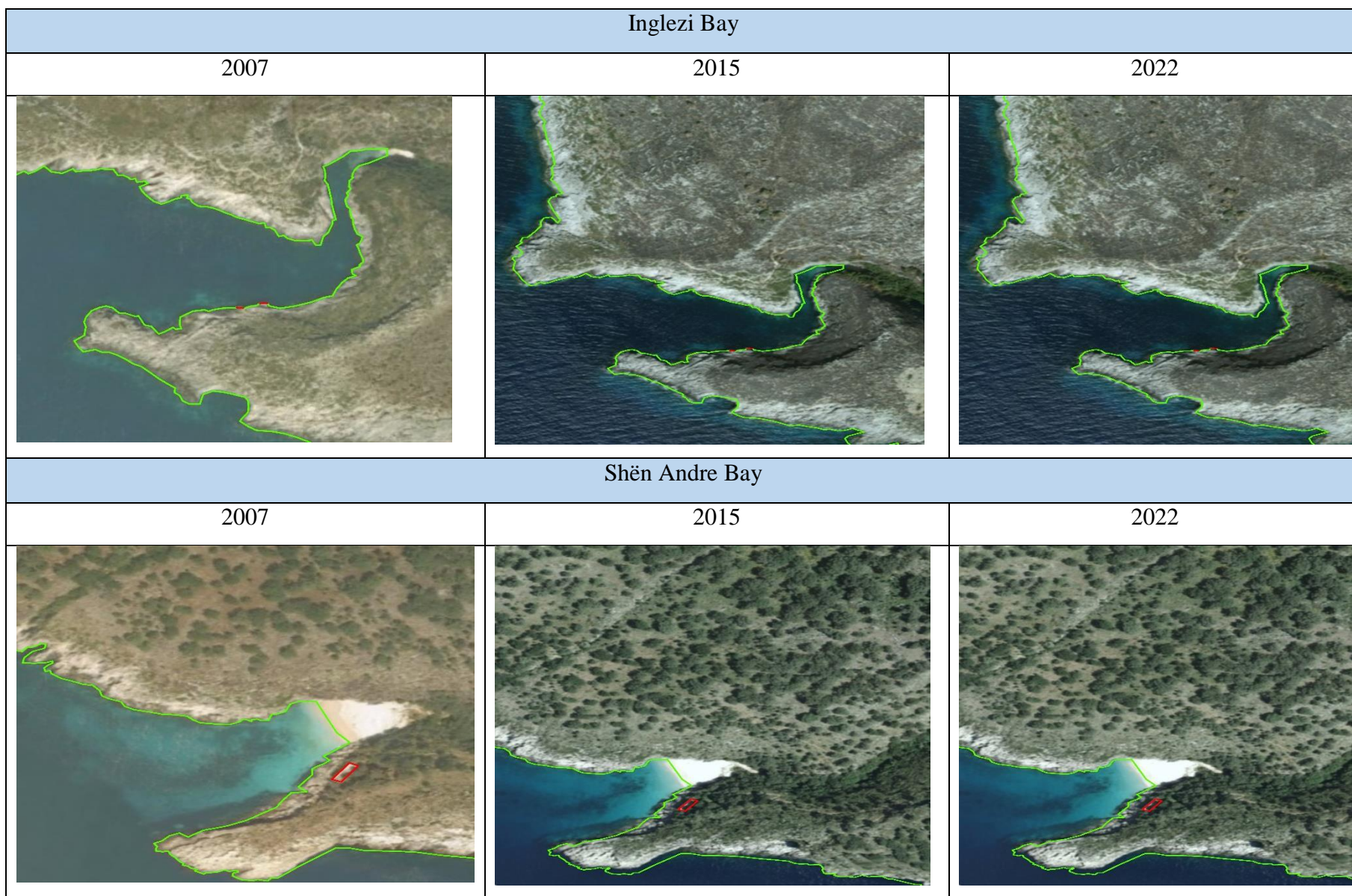


Figure 11. Situation in Sazan Island and the beaches in the western side of Karaburun-Sazan MPA.

VII. References

Management Plan of Karaburun-Sazan National Marine Park, 2015

Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria UNEP/MAP Athens, Greece (2016)

EcoAlbania Mapping of environmental issues along the Albanian coastline

Decision no. 57 “On the criteria and zoning of the territory of a protected area”

Decision no. 60 “For the proclamation of natural ecosystems, natural managed reserve/natural park, and for the approval of the status change of existing surfaces of protected areas of these categories”

ASIG Geoportal <https://geoportal.asig.gov.al/sq>

Plani i integruar ndërsektorial për brezin bregdetar, Shqipëria 2030

Annexes

Annex 1. Common indicator 16 results in Karaburun Peninsula for 2007



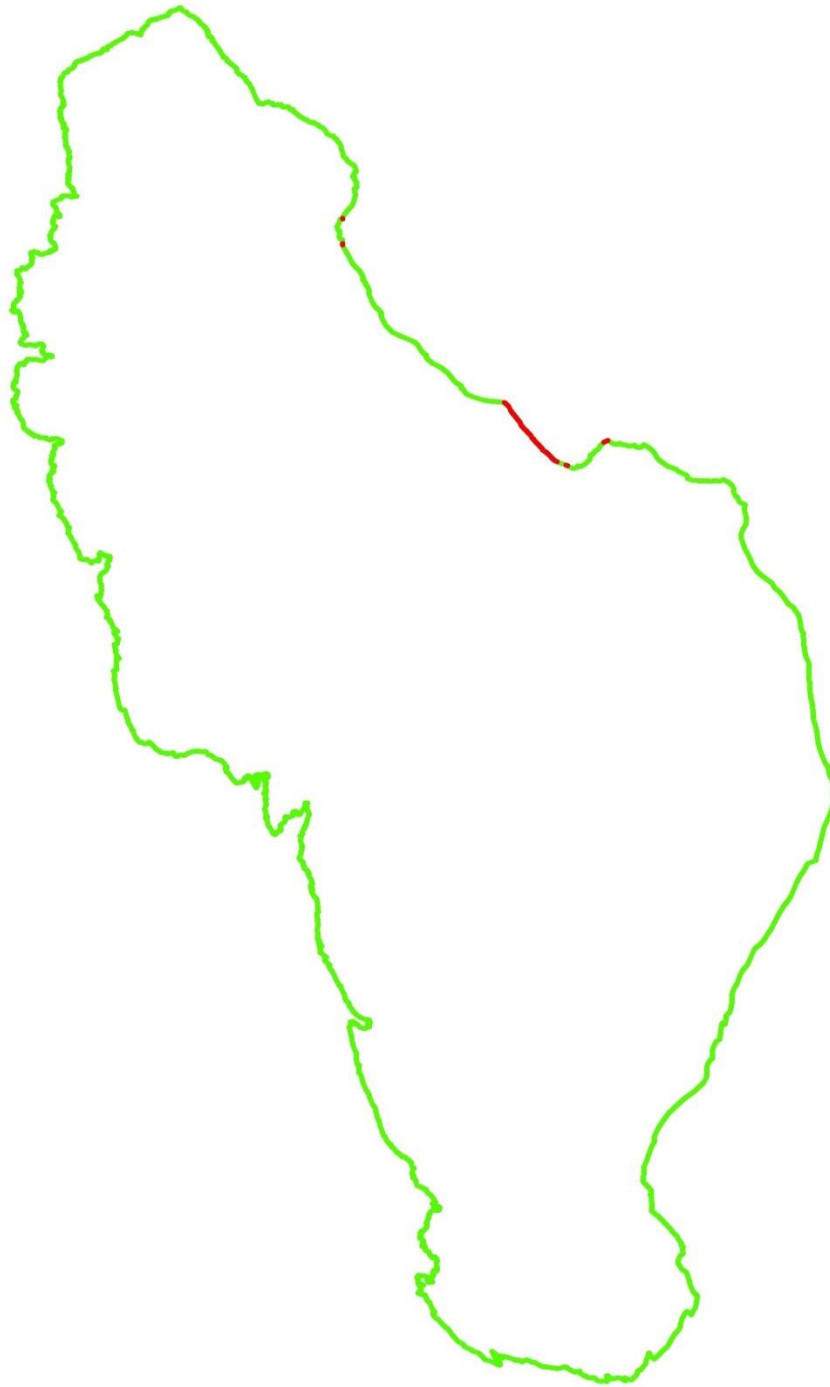
Legjenda

- Vija bregdetare artificiale
- Vija bregdetare natyrore

Indikatori 16
Karaburun 2007



Annex 2. Common indicator 16 results in Sazan Island for 2007



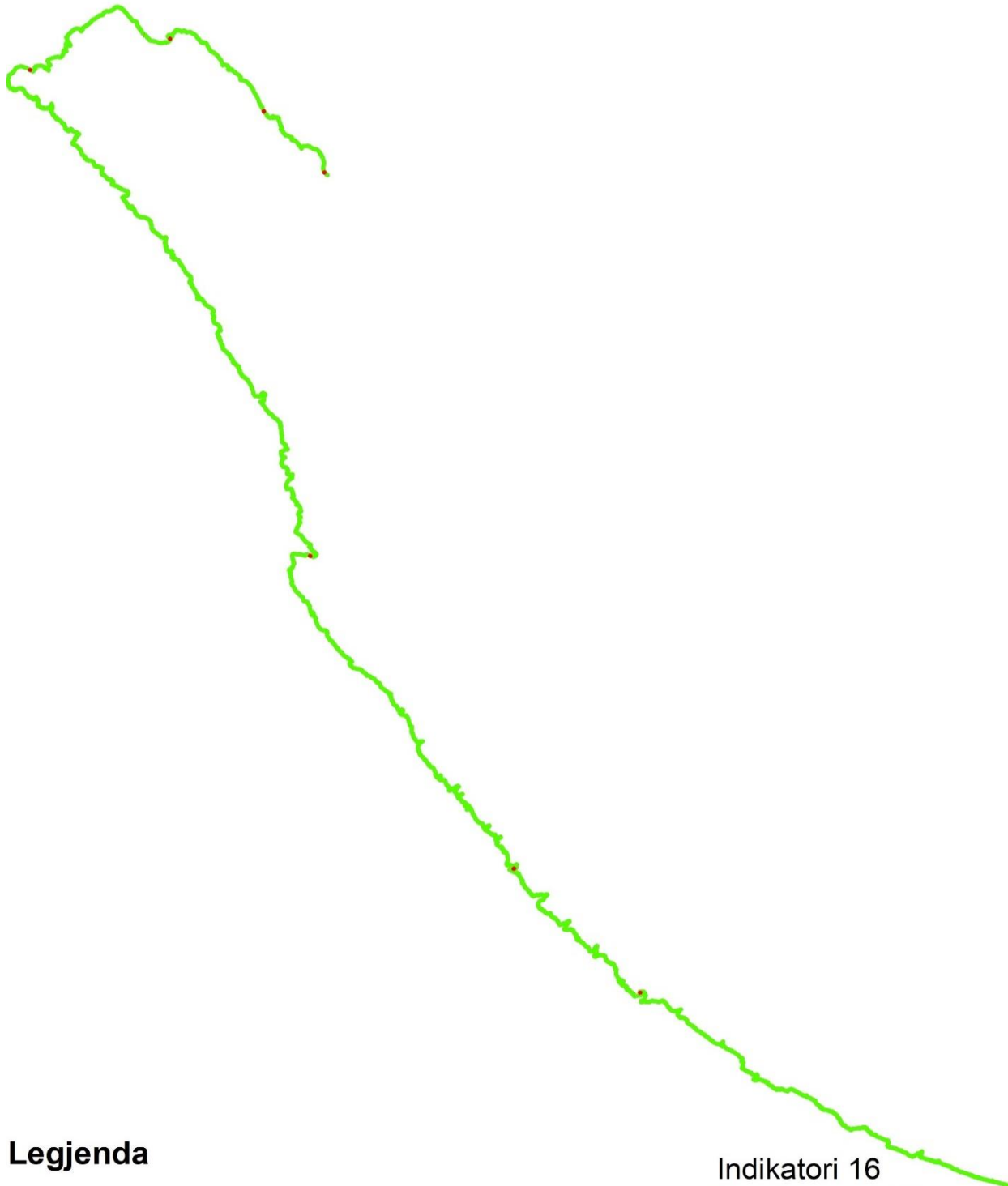
Legjenda

- Vija bregdetare artificiale
- Vija bregdetare natyrore

Indikatori 16
Sazan 2007



Annex 3. Common indicator 16 results in Karaburun Peninsula for 2015



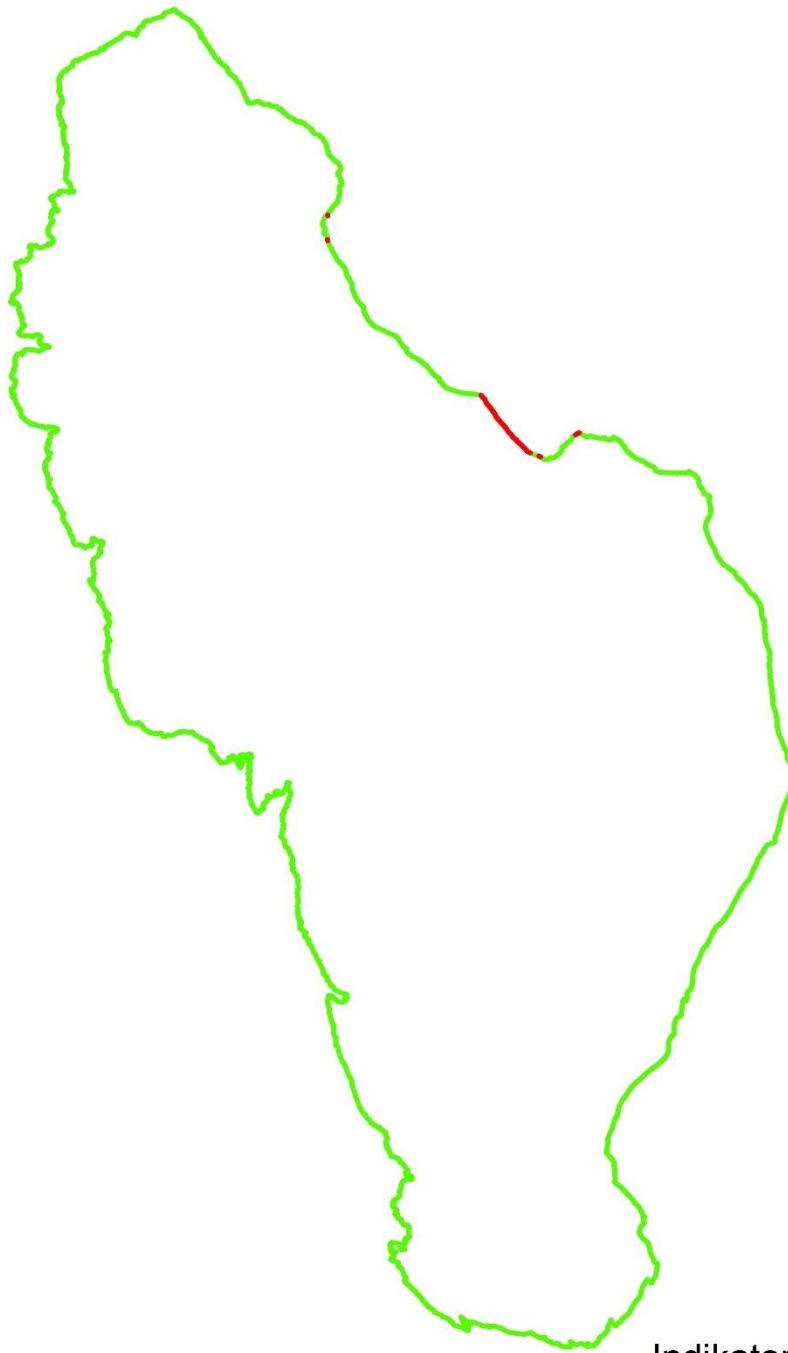
Legjenda

-  Vija bregdetare artificiale
-  Vija bregdetare natyrore

Indikatori 16
Karaburun 2015



Annex 4. Common indicator 16 results in Sazan Island for 2015



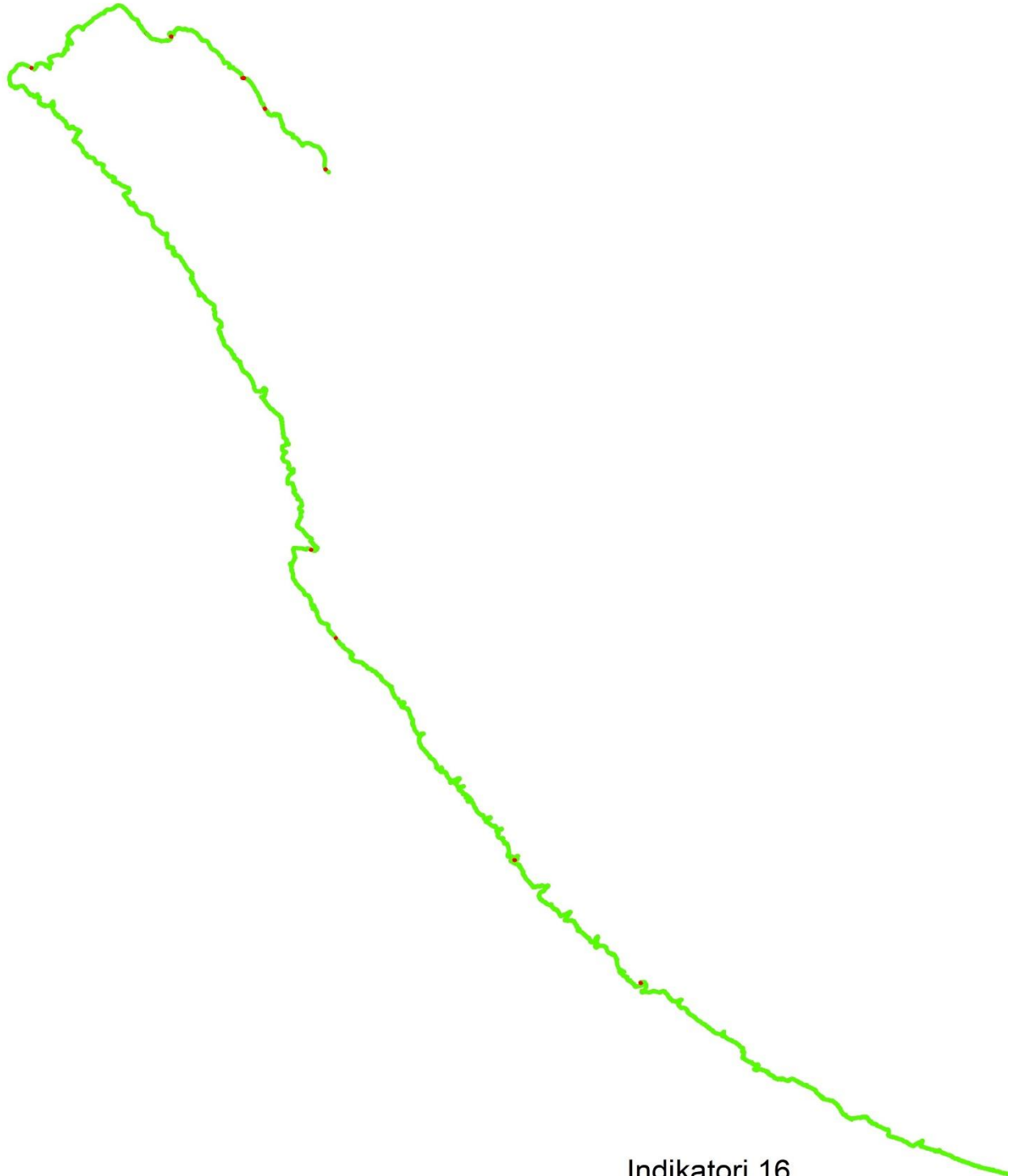
Legjenda

- Vija bregdetare artificiale
- Vija bregdetare natyrore

Indikatori 16
Sazan 2015



Annex 5. Common indicator 16 results in Karaburun Peninsula for 2022



Legjenda

- Vija bregdetare artificiale
- Vija bregdetare natyrore

Indikatori 16
Karaburun 2022





Annex 6. Common indicator 16 results in Sazan Island for 2022



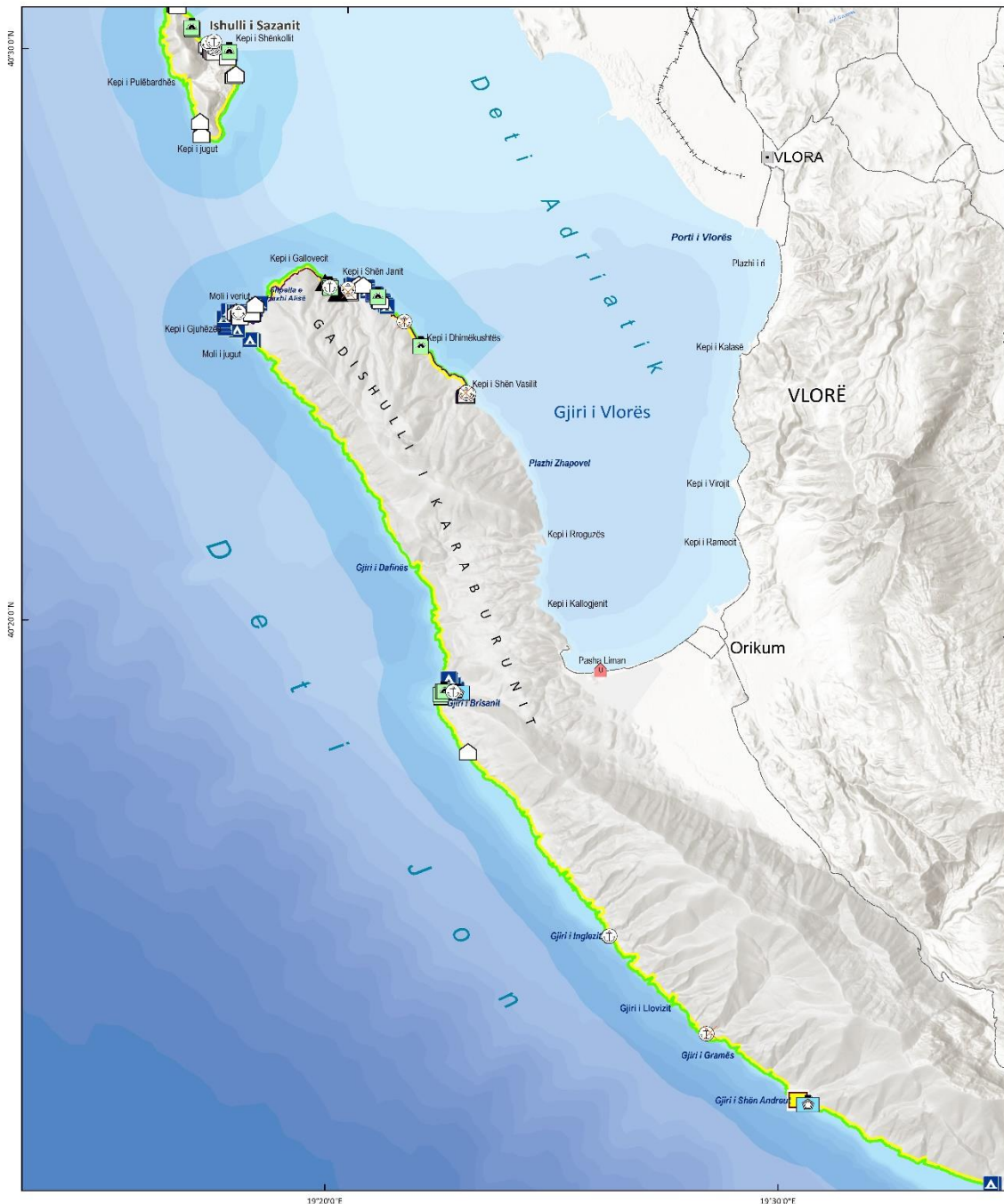
Indikatori 16
Sazan 2021

Legjenda

-  Vija bregdetare artificiale
-  Vija bregdetare natyrore



Annex 7. Manmade infrastructure in Karaburun –Sazan MPA 100m from the coastline



Legjenda

- Vija bregdetare natyrore
- Vija bregdetare artificiale
- Struktura në ujë
- Zona e monitorimit
- Rruga Karaburun
- Rrugë deri në 9m

- Zona e Mbrojtur
- Zonë e Mbrojtur Detare
- M Bankinë/Mol
- T Tunel
- S Stan
- R Reparte
- K Kishë



- G Godina
- B Bunker
- P Postoblok
- D Depo
- X Pikë shërbimi



Indikator 16-IMAP



Mbështetje Operacionale për Menaxhimin Efektiv të Parkut Kombëtar Detar Karaburun-Sazan







Annex 8. Data on the structures identified within the 100m monitoring area.


No.	Object	Coordinate (Long.)	Coordinate (Lat.)	Surface(m ²)	Photo
<i>Service Point</i>					
1	<i>Shën Vasil</i>	19.38026766	40.4019494	3360	
2	<i>Dhimkushtë</i>	19.35594618	40.42273258	802	



3	<i>Shën Jan</i>	19.33542951	40.43112254	896	
4	<i>Gramë</i>	19.47450327	40.21601995	28	


Bunkerë					
1.					
	Bunker Palasë	19.57905897	40.17347224	17	
2.	Bunker Palasë	19.57905897	40.17347224	17	Idem
3.	Bunker Palasë	19.57905897	40.17347224	17	Idem
4.	Bunker Palasë	19.57905897	40.17347224	17	Idem
5.					
	Bunker Brisan	19.37859895	40.31527565	8	
6.	Bunker Brisan	19.37740424	40.31626197	8	Idem
7.	Bunker Brisan	19.3772346	40.31649959	8	Idem


8.	Bunker Brisán	19.3772346	40.31649959	10	
9.	Bunker Brisán	19.37575444	40.31807982	8	


10.					
	Bunker Brisan	19.37575444	40.31807982	8	
11.					
	Bunker Brisan	19.37575444	40.31807982	8	
12.	Bunker Brisan	19.37541903	40.31851892	8	Idem
13.	Bunker Brisan	19.37548517	40.31829868	8	Idem



14.	Bunker Kepi i Gjuhëzës	19.30036867	40.4161326	8	
15.	Bunker Kepi i Gjuhëzës	19.30036867	40.4161326	8	Idem
16.	Bunker Kepi i Gjuhëzës	19.30036867	40.4161326	8	Idem
17.	Bunker Kepi i Gjuhëzës	19.29994044	40.41624157	8	Idem
18.	Bunker Kepi i Gjuhëzës	19.29994044	40.41624157	8	Idem
19.	Bunker Kepi i Gjuhëzës	19.29508027	40.41882583	8	Idem
20.	Bunker Kepi i Gjuhëzës	19.29508027	40.41882583	8	Idem
21.	Bunker Kepi i Gjuhëzës	19.29491895	40.41927485	8	Idem
22.	Bunker Kepi i Gjuhëzës	19.29095164	40.41956876	8	Idem
23.	Bunker Kepi i Gjuhëzës	19.29118544	40.4203935	8	Idem
24.	Bunker Kepi i Gjuhëzës	19.29067933	40.42078642	8	Idem


25.	Bunker Kepi i Gjuhëzës	19.29067933	40.42078642	30	
26.	Bunker Kepi i Gjuhëzës	19.29047249	40.42201191	30	Idem
27.	Bunker Kepi i Gjuhëzës	19.29047249	40.42201191	30	Idem
28.	Bunker Kepi i Gjuhëzës	19.291889	40.42434119	30	Idem
29.	Bunker Kepi i Gjuhëzës	19.291889	40.42434119	8	
30.	Bunker Kepi i Gjuhëzës	19.291889	40.42434119	8	Idem



31.	Bunker Kepi i Gjuhëzës	19.29336214	40.42447858	8	Idem
32.	Bunker Kepi i Gjuhëzës	19.29336214	40.42447858	8	Idem
33.	Bunker Kepi i Gjuhëzës	19.29392163	40.42444249	8	Idem
34.	Bunker Kepi i Gjuhëzës	19.29600024	40.42376618	8	Idem
35.	Bunker Kepi i Gjuhëzës	19.29600024	40.42376618	8	Idem
36.	Bunker Kepi i Gjuhëzës	19.29603911	40.42336588	8	Idem
37.	Bunker Kepi i Gjuhëzës	19.29603911	40.42336588	8	Idem
38.	Bunker Kepi i Gjuhëzës	19.29603911	40.42336588	8	Idem
39.	Bunker Moli i Veriut	19.29696971	40.42433873	8	
40.	Bunker Moli i Veriut	19.29991426	40.42422586	8	Idem
41.	Bunker Moli i Veriut	19.29991426	40.42422586	8	Idem
42.	Bunker Moli i Veriut	19.30036446	40.42399608	8	Idem



43.	Bunker Moli i Veriut	19.300253	40.42402169	8	Idem
44.	Bunker Moli i Veriut	19.30072471	40.42457984	8	Idem
45.	Bunker Moli i Veriut	19.30072471	40.42457984	8	Idem
46.	Bunker Moli i Veriut	19.30072471	40.42457984	8	Idem
47.	Bunker Moli i Veriut	19.30072471	40.42457984	8	Idem
48.	Bunker para shpellës	19.30197609	40.42655987	8	
49.	Bunker para shpellës	19.30197609	40.42655987	8	Idem
50.	Bunker para shpellës	19.30197609	40.42655987	8	Idem
51.	Bunker para shpellës	19.30197609	40.42655987	8	Idem
52.	Bunker para shpellës	19.30197609	40.42655987	8	Idem



					
53.	Bunker Shën Jan	19.33351181	40.43046222	8	
54.	Bunkier Shën Jan	19.33554791	40.43048158	8	Idem
55.	Bunkier Shën Jan	19.33554791	40.43048158	8	Idem
56.	Bunker Shën Jan	19.33554791	40.43048158	8	Idem
57.	Bunker Shën Jan	19.33690233	40.43207754	8	Idem
58.	Bunker Shën Jan	19.33690233	40.43207754	8	Idem
59.	Bunker Shën Jan	19.33790623	40.43315127	8	Idem
60.	Bunker Shën Jan	19.33790623	40.43315127	8	Idem
61.	Bunker Shën Jan	19.3390279	40.43292217	8	Idem



					
62.	Bunker	19.34143425	40.43212565	8	
63.	Bunker	19.34143425	40.43212565	8	Idem
64.	Bunker	19.34324786	40.43150941	8	Idem
65.	Bunker	19.34488958	40.43058159	8	Idem
66.	Bunker	19.34488958	40.43058159	8	Idem
67.	Bunker	19.34488958	40.43058159	8	Idem
68.	Bunker	19.34488958	40.43058159	8	Idem
69.	Bunker	19.34567118	40.42987797	8	Idem
70.	Bunker	19.34657643	40.42881262	8	Idem
					
71.	Bunker	19.34671708	40.42858711	8	




72.	Bunker	19.34747764	40.42825745	8	Idem
73.	Bunker	19.34747764	40.42825745	8	Idem
74.	Bunker	19.34874918	40.42744054	8	Idem
75.	Bunker	19.34939899	40.42694319	8	Idem
76.	Bunker	19.34939899	40.42694319	8	Idem
77.	Bunker	19.28879536	40.49966223	8	Idem
78.	Bunker Sazan	19.28879536	40.49966223	8	Idem
79.	Bunker Sazan	19.28879536	40.49966223	8	Idem
80.	Bunker Sazan	19.28919275	40.49920896	8	Idem
81.	Bunker	19.29008643	40.49897898	8	Idem
82.	Bunker Sazan	19.29020451	40.49945305	8	Idem
83.	Bunker Sazan	19.28014422	40.47730564	8	Idem
84.	Bunker	19.29053255	40.49975335	8	Idem
<i>Tunele</i>					
1.	Tunel Brisan	19.37248114	40.31287131		

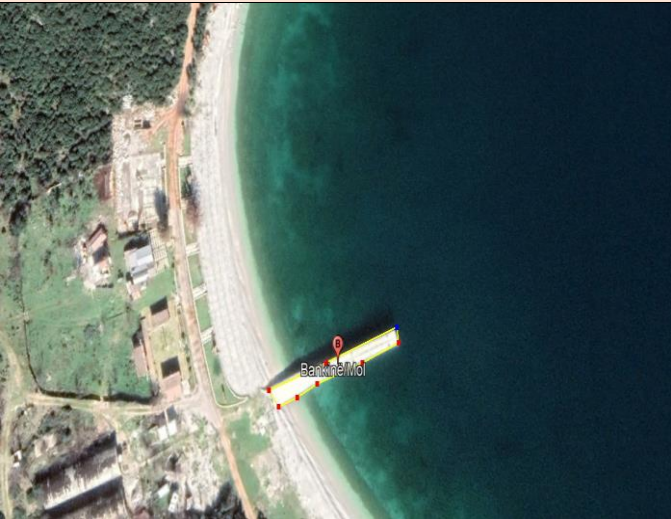
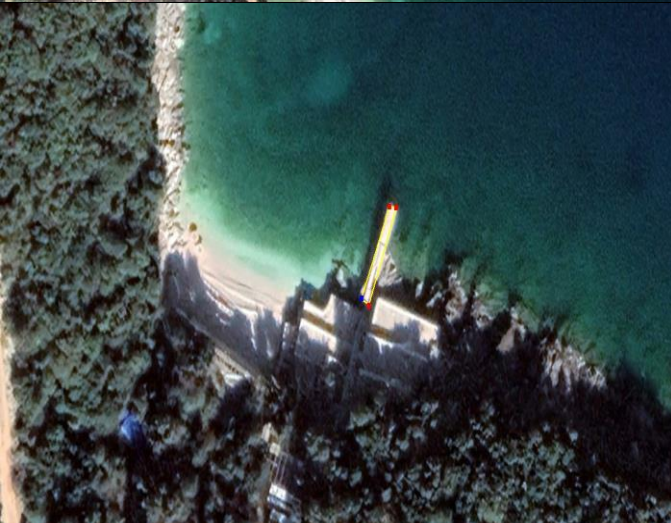
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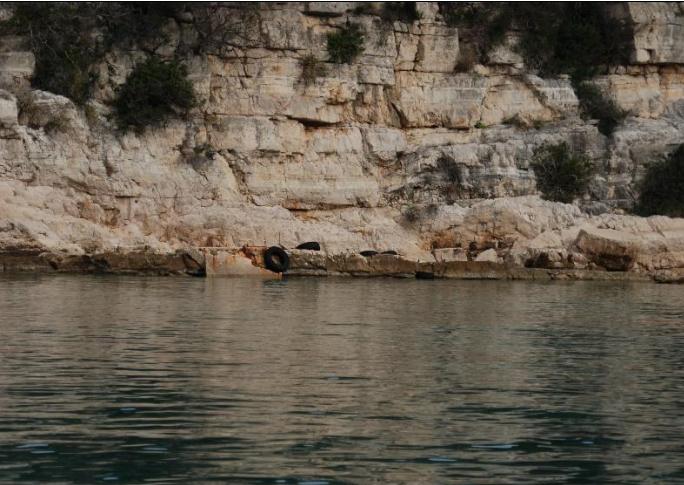
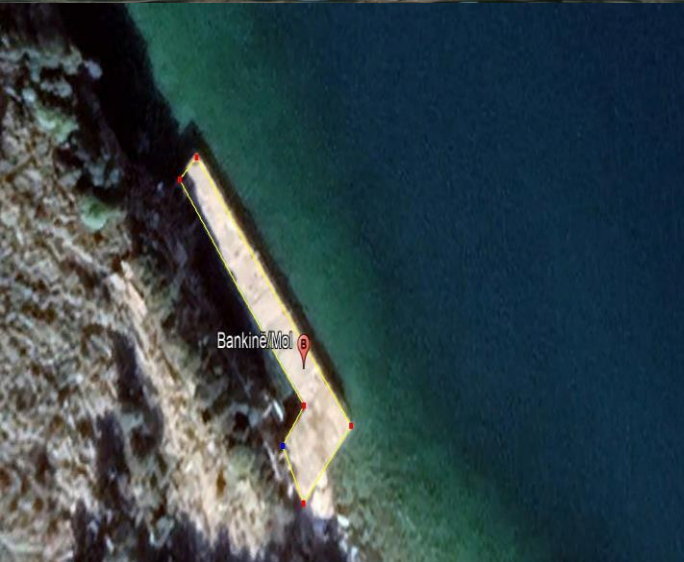
4.					
	Tunel Brisan	19.37225045	40.31363831		
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	Tunel Brisan	19.37366499	40.31419038		



6.					
7.	Tunel Brisan	19.37366499	40.31419038		
	Tunel Shën Jan	19.32834637	40.43231012		



8.					
	Tunel Shën Jan	19.32892029	40.43175066		
9.					
	Tunel Shën Jan	19.32892029	40.43175066		



10.					
	Tunel Dhimkushtë	19.34635726	40.42937751		
11.					
	Tunel Dhimkushtë	19.36272924	40.4159543		
12.					
	Tunel Dhimkushtë	19.36272924	40.4159543		



13.	Tunel Sazan	19.29022535	40.50006675		
14.	Tunel Sazan	19.27843651	40.50810627		
15.	Tunel	19.2769613	40.50726815		
<i>Bankinë/Mol</i>					
1	Bankinë/Mol Shën Vasil	19.38065575	40.40184246	328	
2	Bankinë/Mol Dhimkushtë	19.35705087	40.42210772	28	

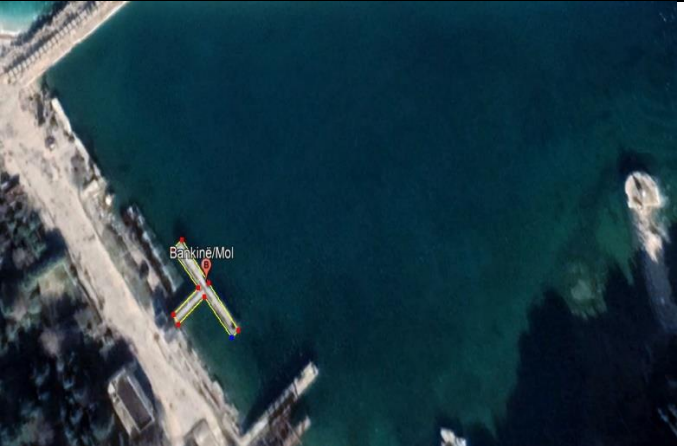

3	Bankinë/Mol Shën Jan I	19.33600986	40.4315647	12	
4	Bankinë/Mol Shën Jan II	19.32884808	40.43209447	149	

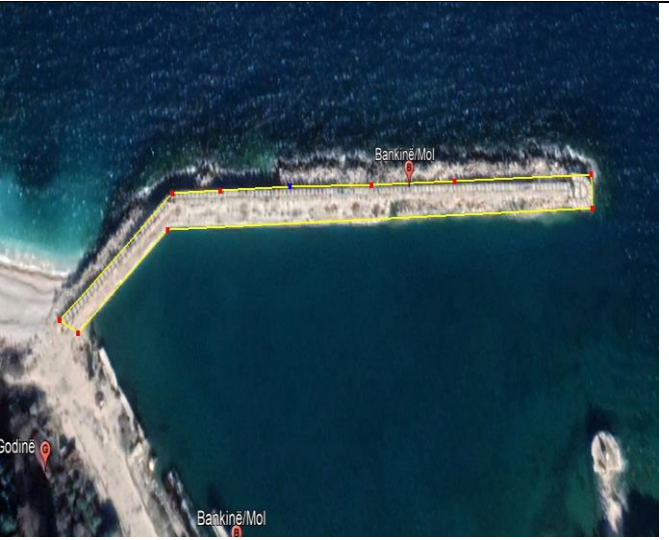

5	Bankinë/Mol Moli i Veriut	19.29554052	40.42412477	5	
6	Bankinë/Mol Gjiri i Inglezit 1	19.43656169	40.2440218	3	



7	Bankinë/Mol Gjiri i Inglezit II	19.43656169	40.2440218	3	
8	Bankinë/Mol Gramë	19.47311251	40.21610399	30	



9	Bankinë/Mol Brisan	19.37755852	40.31480145	3	
10	Bankinë/Mol Brisan	19.37756288	40.31480313	4	



11	Bankinë/Mol Sazan	19.28539005	40.50198497	292	
12	Bankinë/Mol Sazan	19.28539005	40.50198497	197	



13	Bankinë/Mol Sazan	19.28539005	40.50198497	262	
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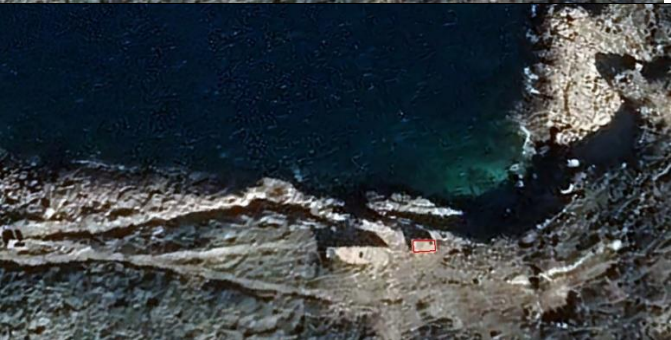
15	Bankinë/Mol Sazan	19.28539005	40.50198497	4854	
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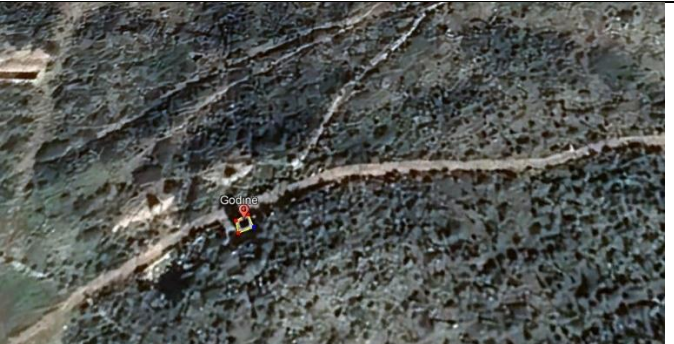


Report					
1	Report Shën Andre	19.51109136	40.19565656	41	
2	Report Brisan	19.37888255	40.31439361	921	


Stane					
1	Stan	19.32692803	40.43341246	14	
2	Stani i Agos	19.33145007	40.43121382	90	

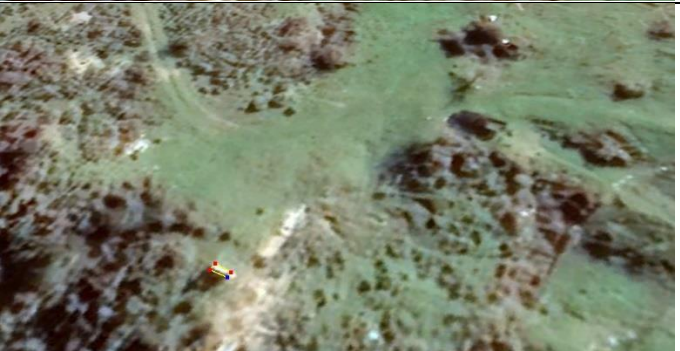
<i>Kisha</i>					
1	Kisha Shën Andre	19.51036223	40.19627824	10	
<i>Depo</i>					
1	Depo e Valanidhit	19.50778858	40.19664616	83	


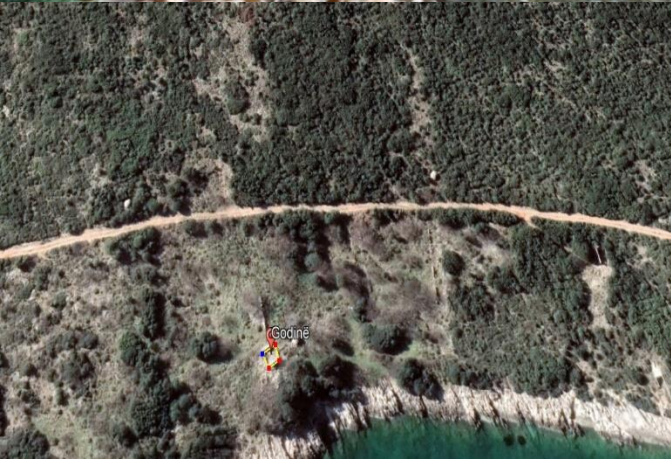

Fener					
1	Feneri i Gallovecit	19.32110732	40.43850351	2	
2	Feneri Sazan	19.28132993	40.47508183	28	

Godina					
1	Godinë Kepi i Gjuhëzës	19.29496202	40.42409378	10	
2	Godinë Kepi i Gjuhëzës	19.29496202	40.42409378	43	
3	Godinë Kepi i Gjuhëzës	19.29496202	40.42409378	24	




4	Godinë	19.29603911	40.42336588	16	
5	Godinë	19.29980412	40.42387808	6	
6	Godinë	19.30011973	40.42431618	11	


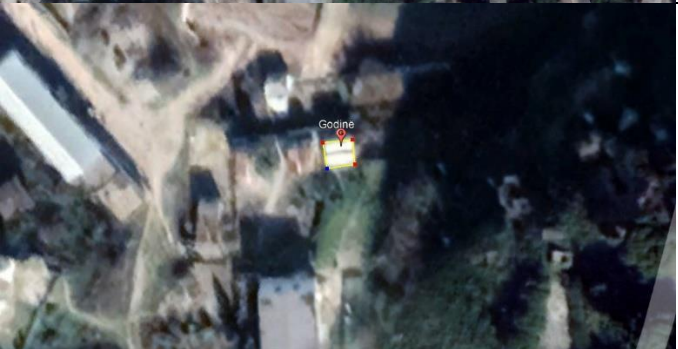
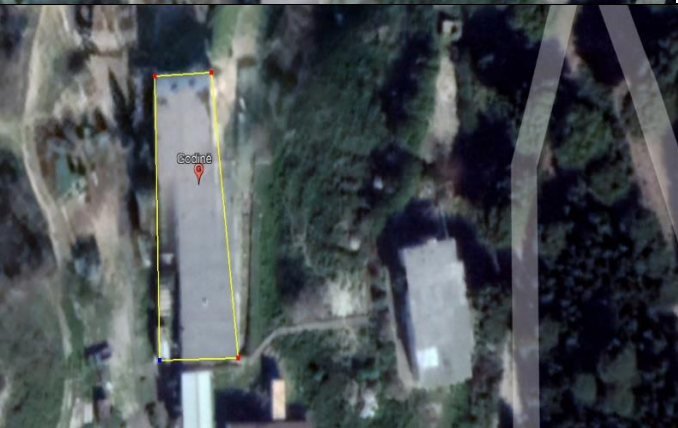
7	Godinë para shpellës	19.30110955	40.42662252	6	
8	Godinë para shpellës	19.30110955	40.42662252	6	
9	Godinë Shën Jan	19.33554791	40.43048158	363	

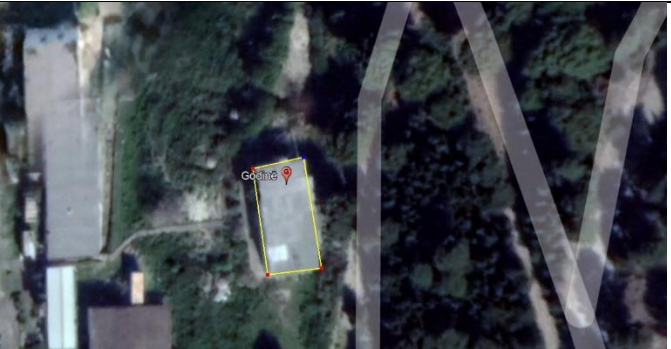


10	Godinë Shën Jan	19.33575744	40.43104218	3	
11	Godinë Shën Jan	19.33575744	40.43104218	2	
12	Godinë Shën Jan	19.3390279	40.43292217	70	




13	Godinë Shën Jan	19.3390279	40.43292217	25	
14	Godinë	19.34747764	40.42825745	25	
15	Godinë Brisan plazh	19.37909116	40.31466753	14	

16	Godinë	19.3831831	40.29704618	269	
17	Godinë Sazan	19.28340856	40.50074059	211	
18	Godinë	19.28340856	40.50074059	5	




19	Godinë	19.28340856	40.50074059	104	
20	Godinë	19.28340856	40.50074059	83	
21	Godinë	19.28340856	40.50074059	367	




22	Godinë	19.28340856	40.50074059	24	
23	Godinë	19.28340856	40.50074059	35	
24	Godinë	19.28340856	40.50074059	732	




25	Godinë	19.28340856	40.50074059	234	
26	Godinë Sazan	19.28976737	40.49865251	51	
27	Godinë Sazan	19.29204722	40.49380662	114	

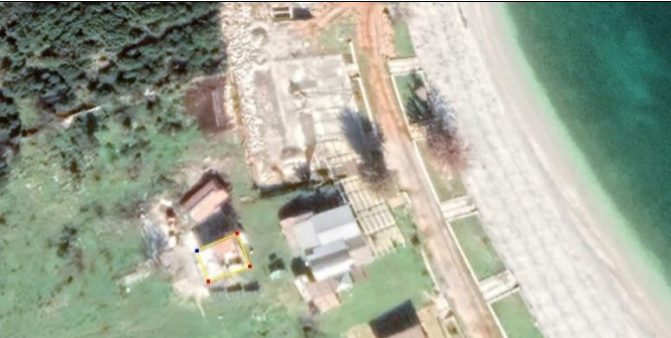
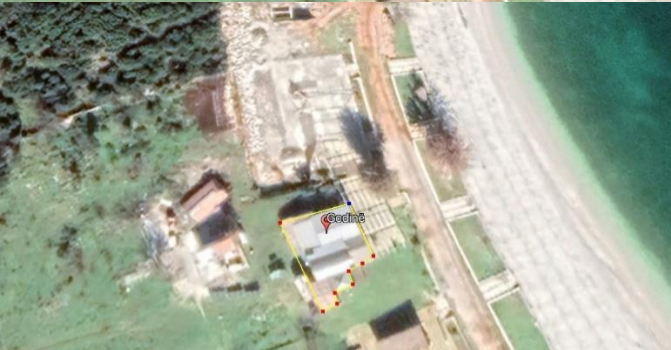

28	Godinë	19.29204722	40.49380662	203	
29	Godinë Sazan	19.29230384	40.49377259	79	
30	Godinë Sazan	19.28076903	40.47597709	288	


					
31	Godině Sazan	19.27961883	40.47967889	30	
32	Godině Sazan	19.2704723	40.51371181	269	
33	Godině Sazan	19.2704723	40.51371181	59	

34	Godinë Sazan	19.2704723	40.51371181	206	
35	Godinë Shën Vasil	19.38007023	40.40162286	288	
36	Godinë Shën Vasil	19.38007023	40.40162286	288	

37	Godinë Shën Vasil	19.38007023	40.40162286	34	
38	Godinë Shën Vasil	19.38007023	40.40162286	51	
39	Godinë Shën Vasil	19.38007023	40.40162286	11	

40	Godinë Shën Vasil	19.38007023	40.40162286	11	
41	Godinë Shën Vasil	19.38007023	40.40162286	5	
42	Godinë Shën Vasil	19.3797457	40.40199645	28	

43	Godinë Shën Vasil	19.3797457	40.40199645	42	
44	Godinë Shën Vasil	19.3797457	40.40199645	44	
45	Godinë Shën Vasil	19.3797457	40.40199645	45	

46	Godinë Shën Vasil	19.3797457	40.40199645	46	
47	Godinë Shën Vasil	19.3797457	40.40199645	47	