



Enviroment and Climate
Regional Accession Network

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TAIEX-ECRAN Sub-Regional Workshop on Appropriate Assessment of the Kavadarci – Tikvesh reserve Pilot Site (Natura 2000)

Workshop II: Main Assessment

Topic: Tikvesh pilot project and area specification

Skopje, the former Yugoslav Republic of Macedonia. 13 – 14 October 2015



This Project is funded by the European Union



A project implemented by Human Dynamics Consortium

1 a. What is necessary to know for AA

1a data from developer

1b data concerning the assessed area

2. Field survey

3. AA findings and results



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1. b What is necessary to know for AA (data concerning the assessed area)

- Current field data concerning target features within possibly impacted SPA/SCI ^{*1}
 - Quantification of target features
 - Ecological relations among the target features, in relation to habitats and ecological functions including traditional landuse
-

*^{*1} One of the reasons why data from SDF are insufficient*

1 a. What is necessary to know for AA

(data from developer)

- Location of the assessed project
- Landtake
- Technologies used during construction (inputs and outputs)
- Technologies used during operation (inputs and outputs)
- Infrastructure and logistics for project construction
- Infrastructure and logistics for project operation
- Duration of project operation
- Technologies used for project termination

1 a. What is necessary to know for AA (data from developer)

- Location of the assessed project (key project components)



1 a. What is necessary to know for AA *(data from developer)*

- Hotel facility location



1 a. What is necessary to know for AA *(data from developer)*

- Cable way bottom station visualisation



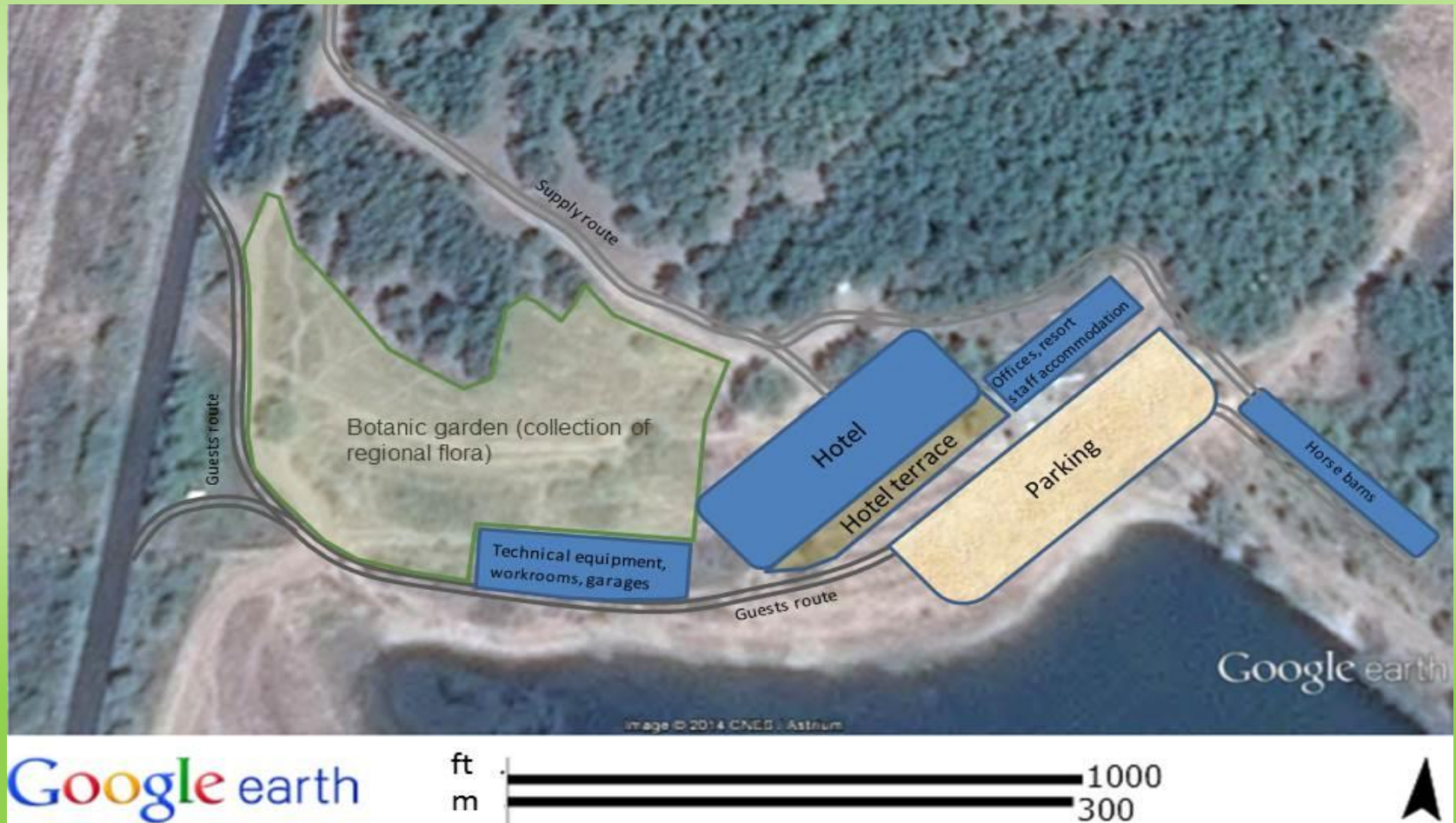
1 a. What is necessary to know for AA (data from developer)

- Cable way visualisation



1 a. What is necessary to know for AA (data from developer)

- Landtake (hotel facilities)



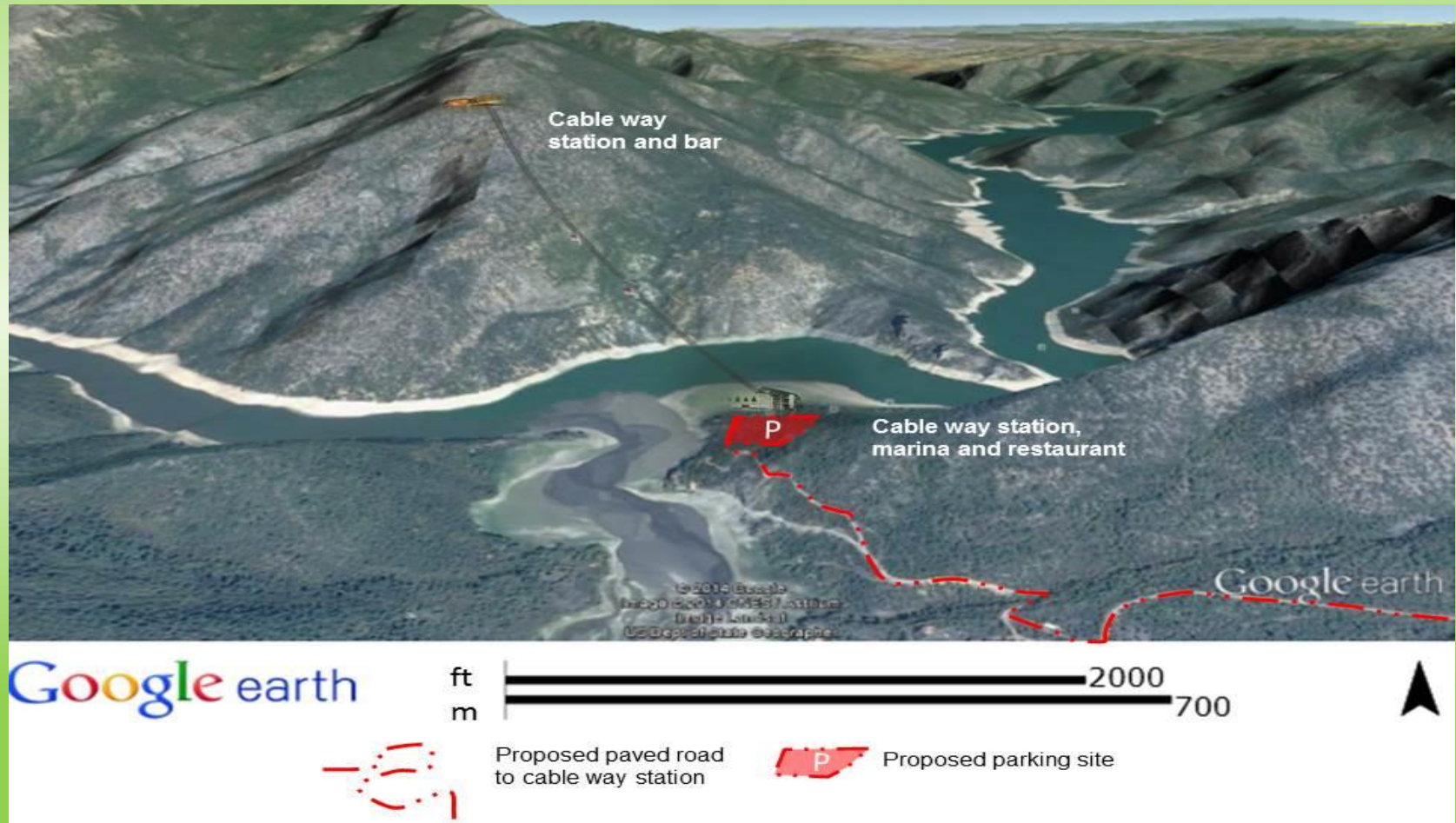
1 a. What is necessary to know for AA

(data from developer)

- Landtake (hotel facilities)
- The hotel and other buildings will cover 4,500 m² of the land near Done Popov Lake.
- Additional 3,000 m² will be taken by car parks and necessary roads.
- For the construction of the infrastructure no additional temporary land take will be necessary because for these purpose the area to be later converted into hotel parking will be used.

1 a. What is necessary to know for AA (data from developer)

- Landtake (cable way)



1 a. What is necessary to know for AA

(data from developer)

- Landtake (cable way stations)
- The upper station (with a bar and a small tourist accommodation space) will cover about 400 m² near the top of the hill about 2.5 km far from Orle Mountain (south-east direction). Owing to terrain configuration it will not be necessary to use any pillars; both cableway stations will be connected directly.
- The bottom station will contain a technical utility of the cableway and a restaurant. The buildings will cover 1,200 m² of the land and other 2,000 m² will be taken by car parks located in three terraces respecting the slope above the cableway station.

1 a. What is necessary to know for AA

(data from developer)

- Landtake (marina near cable way bottom station)
- The marina will be built as a narrow paved strip over the highest water level only (used as the lowest car park as well) and several floating piers on poles. This solution respects the high fluctuation of the Tikvesh Lake water level.

1 a. What is necessary to know for AA

(data from developer)

- Landtake (cable way access road)
- The access road will be restored and paved in the present width of 3.5 m and length of 12 km.
- Bays for passing of oncoming cars at least one per each kilometer up to 30 m long and 6.5 m wide (up to 8 m at sites with extraordinary scenery where longer stops of cars can be expected). The total area 2,500 m².

1 a. What is necessary to know for AA (data from developer)

- Landtake (cable way access road)



1 a. What is necessary to know for AA

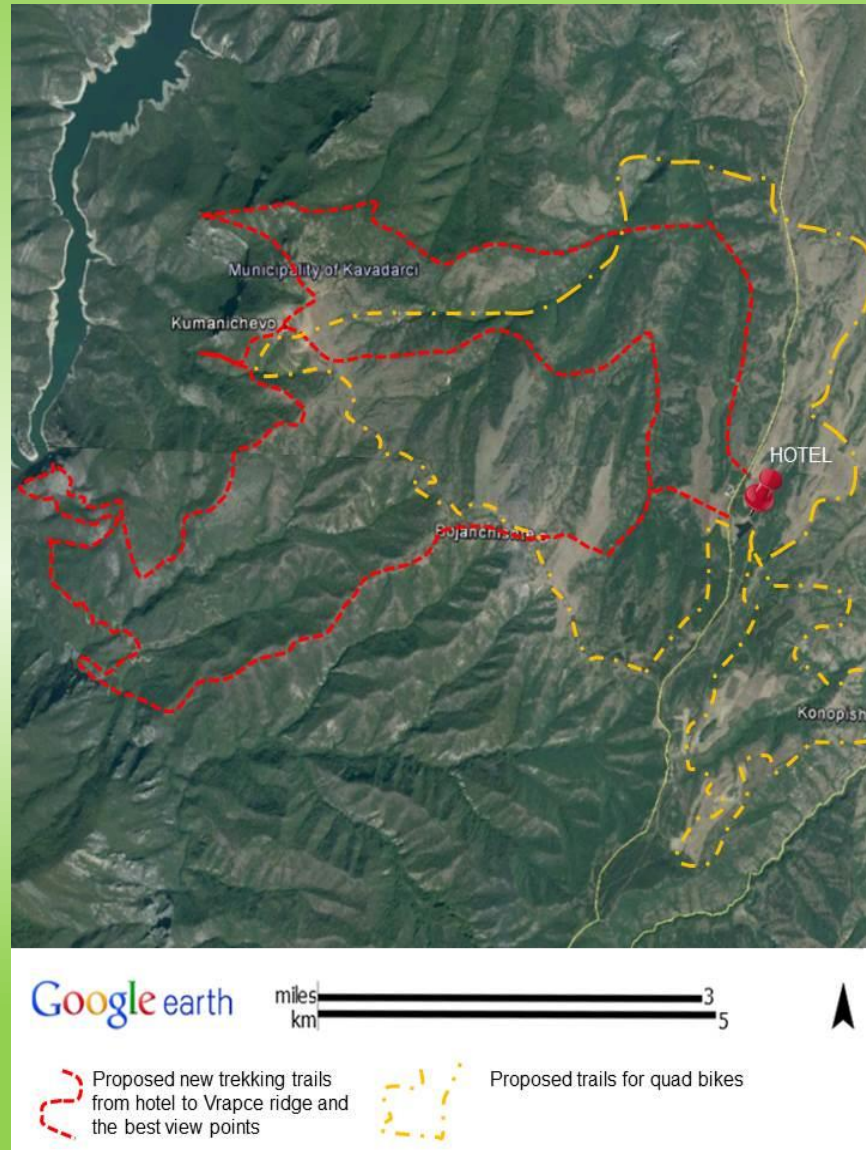
(data from developer)

- Bottom cable way station and marina access road limits
- The road to the bottom station, restaurant and marina will not be open to camper trailers.
- The number of busses coming there will be limited. Busses will have to ask for a special permit to enter this road (issued at the hotel or by a web site application). This measure takes control over the number of busses on the car park and the narrow road as well as over the technical condition of the busses entering this mountain road.

1 a. What is necessary to know for AA

(data from developer)

- Landtake (hiking and quad bike trails)



1 a. What is necessary to know for AA *(data from developer)*

- Habitats where quad-bike trails are proposed



1 a. What is necessary to know for AA

(data from developer)

- Landtake (hiking trails)



1 a. What is necessary to know for AA

(data from developer)

- Landtake (hiking and quad bike trails)
- This part of project does not need any land take
- All trails will be unpaved without any infrastructure
- Trails will be marked in the field by colored strips on tree trunks and rocks only

1 a. What is necessary to know for AA

(data from developer)

- Technologies used during project implementation (inputs)
 - Vehicles and other transportation machines used for building
 - Volume and type of materials used for building
 - Transportation of building materials
- 2,500 tons of construction parts and other material will be moved to the construction site
- 50 tons of limestone gravel and stones
- Local water sources for project parts construction and operation
(Done Popov Lake, Lake Tikvesh, Blasnica River)

1 a. What is necessary to know for AA (data from developer)

- Technologies used during project implementation (outputs)
 - Noise
 - Machinery engines of category “N” with power higher than 250 kW which could be used for the construction is **82 dB**
 - Helicopters produce noise between **95 – 92 dB**
 - The value of noise reduction is quoted between **20–22 dB** per each 100 m of distance from the source.

1 a. What is necessary to know for AA

(data from developer)

- Technologies used during project operation (outputs)
 - Noise
 - Hotel and its infrastructure and the cableway and its stations will not produce noise
 - Significant noise would be produced in the area of quad bike trails.
 - Individual noise, produced by each quad bike is up to 75 dB; the area affected by fast movement and the number of quad bikes will cover about 50 km².

1 a. What is necessary to know for AA

(data from developer)

- Technologies used during project implementation (outputs)
 - Emissions
 - Limited volume of emissions during the construction phase of the hotel and other buildings and pavement of the road to the hamlet of Vrapce.
 - Emissions will be produced by trucks and machinery used for the construction and the volume of emissions is defined by the emission limits of these vehicles and helicopters.

1 a. What is necessary to know for AA

(data from developer)

- Technologies used during project operation (outputs)
 - Emissions
 - Operation of the project will not require high levels of energy consumption and all the needs will be covered by electric energy only. No other emissions of the project elements are expected.

1 a. What is necessary to know for AA

(data from developer)

- Technologies used during project implementation (outputs)
 - Waste
 - Materials dug on the sites of construction (soil, rocks) will be used for the adjustments of roads and car parks

1 a. What is necessary to know for AA

(data from developer)

- Technologies used during project operation (outputs)
 - Waste
 - Household waste will be transported from the area to Kavadarci
 - Sewage water from the hotel and restaurant will be purified in sewage treatment facilities near these buildings
 - Tikvesh Lake will be the recipient for the purified wastewater
 - All waste from the bar near the upper cableway station will be transported by the cableway in special containers to the bottom station and removed together with the other household waste.

1 a. What is necessary to know for AA

(data from developer)

- Technologies used for project termination
- For the project of Eco-resort Kavadarci termination hasn't been specified
- Project is implemented as a long-term project with sustainable upkeep

1. b What is necessary to know for AA *(data concerning the assessed area)*

- Basic data about SPA/SCI likely to be affected by the project
- Biological characteristics of the area
- Quantitative data about target features within possibly affected SPA/SCI
- Quantitative data about target features found within possibly affected SPA/SCI in the framework of the country and biogeographical region

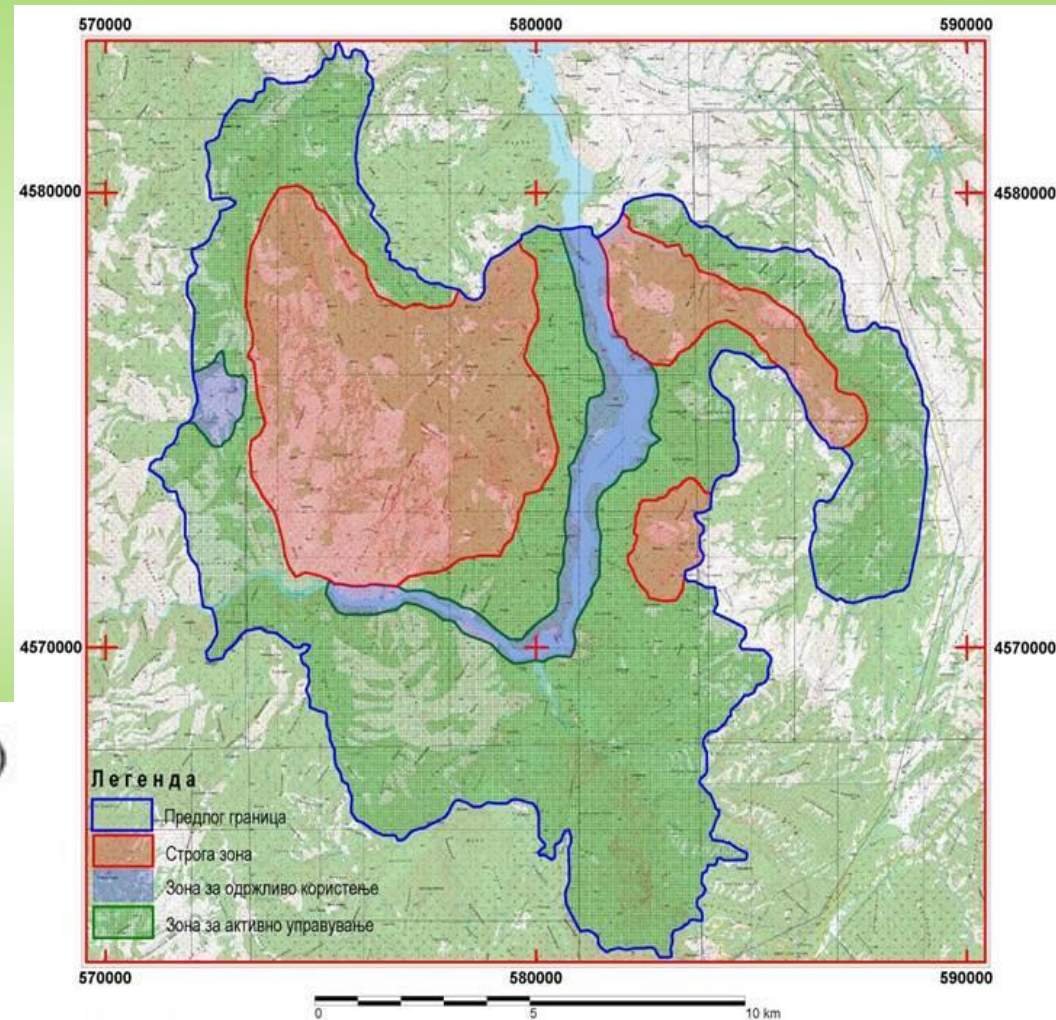
1. b What is necessary to know for AA (data concerning the assessed area)

- Current field data concerning target features within possibly impacted SPA/SCI ^{*1}
 - Quantification of target features
 - Ecological relations among the target features, in relation to habitats and ecological functions including traditional landuse
-

*^{*1} One of the reasons why data from SDF are insufficient*

1. b What is necessary to know for AA *(data concerning the assessed area)*

- Basic data about SPA/SCI
possibly affected by the
project



Newly proposed boundaries (2010)

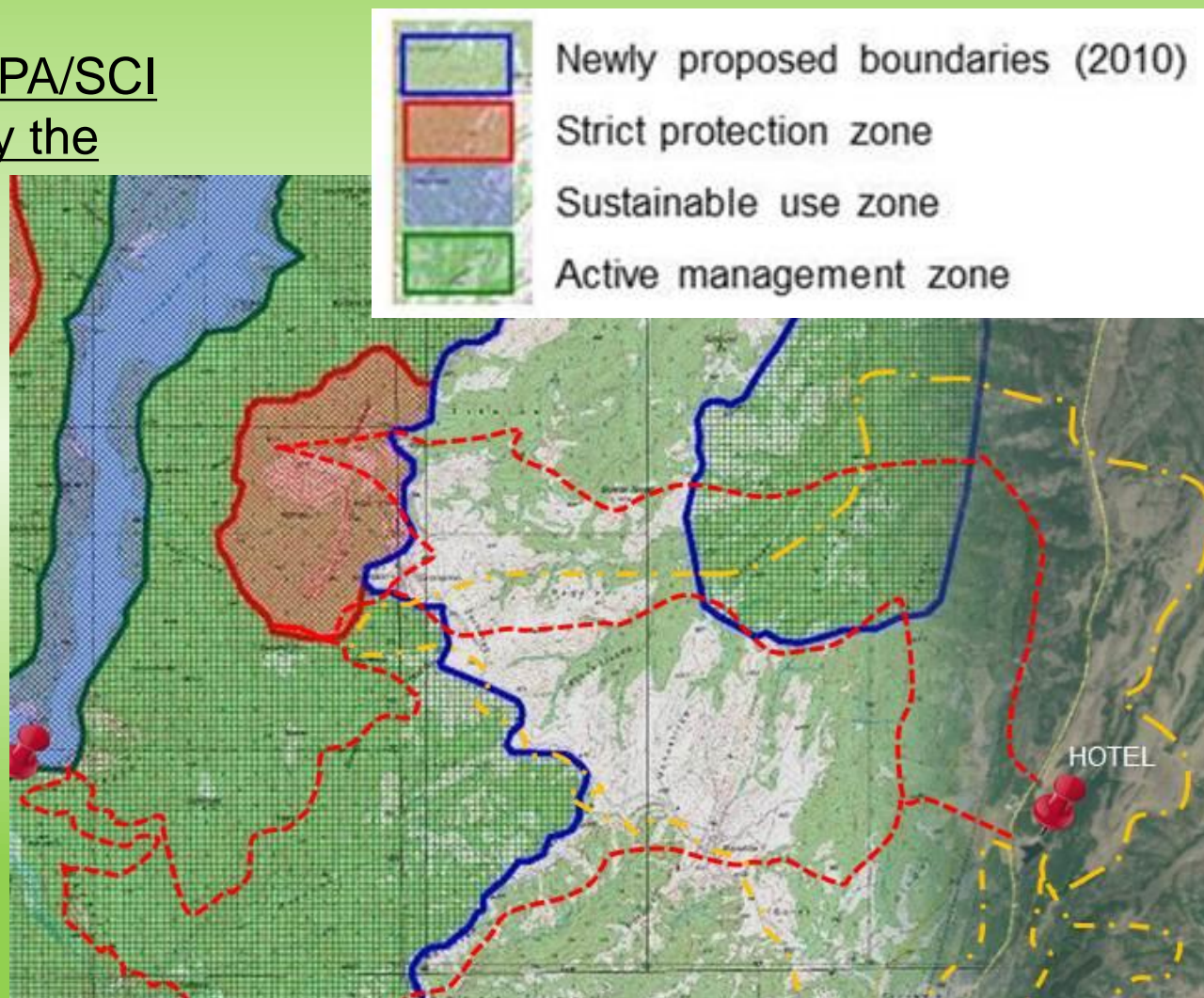
Strict protection zone

Sustainable use zone

Active management zone

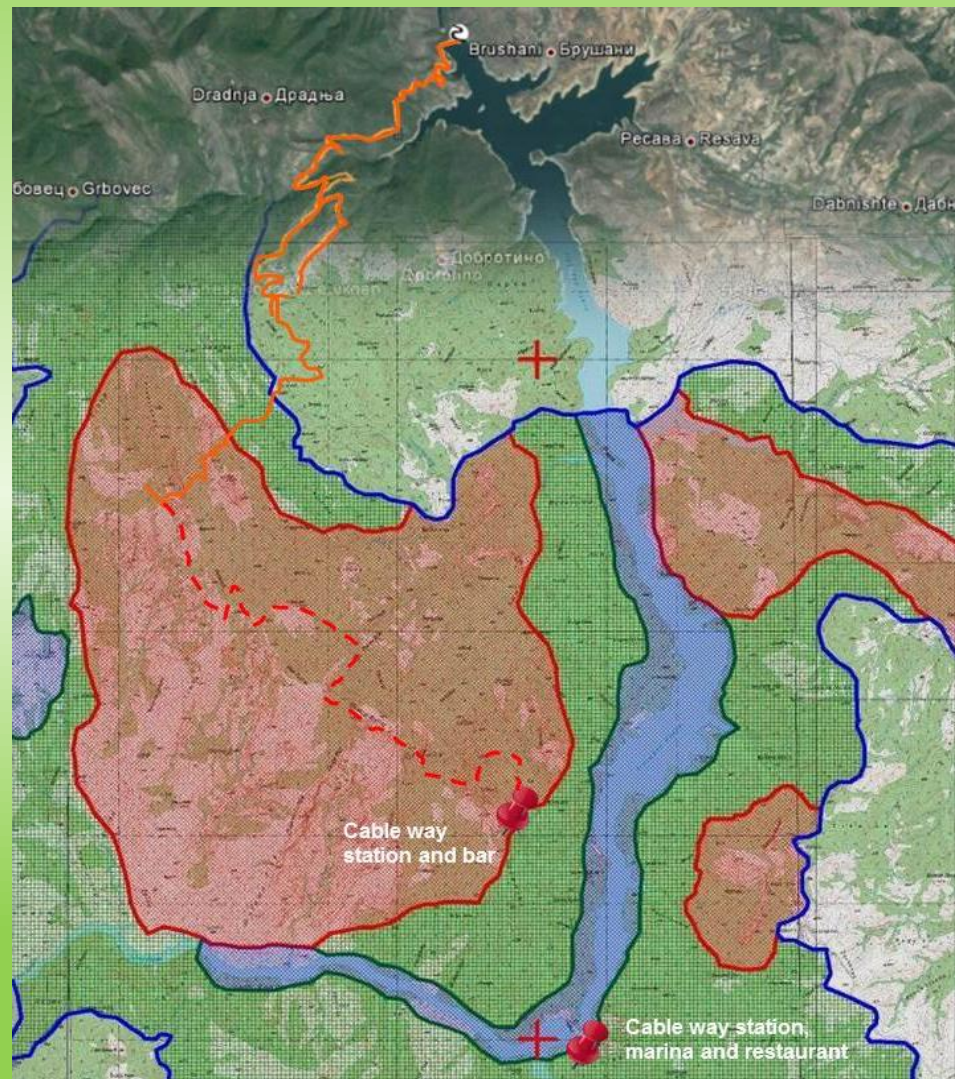
1. b What is necessary to know for AA *(data concerning the assessed area)*

- Basic data about SPA/SCI
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1. b What is necessary to know for AA *(data concerning the assessed area)*

- Basic data about SPA/SCI
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project



Newly proposed boundaries (2010)

Strict protection zone

Sustainable use zone

Active management zone

1. b What is necessary to know for AA *(data concerning the assessed area)*

- Biological characteristics of the area
 - Tikvesh area has extremely high biological diversity, there is a lot of plant as well as animal species which could be affected by the project.
 - **If the plants and animals are not listed in national reference lists and listed as target species of the Tikvesh site, they cannot be subject of the assessment!**

1. b What is necessary to know for AA *(data concerning the assessed area)*

- Biological characteristics of the area
- Biological characteristics were summarized by Matevski (2010) mainly
- A list of habitats from to Annex I of Habitats Directive has not yet been drafted for the former Yugoslav Republic of Macedonia
- In the Tikvesh area 13 plant species have been recognized as endemic to Macedonia but their classification from the point of view of the annexes of Habitats Directive does not exist yet

1. b What is necessary to know for AA *(data concerning the assessed area)*

- Biological characteristics of the area
- Last but not least, no aquatic plants, animals or birds were included in this assessment as the lake is artificial and does not represent the natural biodiversity of the area
- These reasons determine the lists of target features of the proposed SCI for this pilot assessment; therefore, these lists may not be final as regards target features of the Tikvesh area as a site of Natura 2000 network in future

1. b What is necessary to know for AA (data concerning the assessed area)

- Biological characteristics of the area

Target species of proposed SCI Tikvesh area

English name	Scientific name
Leopard Snake	<i>Zamenis situla</i>
Mediterranean Horseshoe Bat	<i>Rhinolophus euryale</i>
Greater Horseshoe Bat	<i>Rhinolophus ferrumequinum</i>
Blasius' Horseshoe Bat	<i>Rhinolophus blasii</i>
Schreiber's Bat	<i>Miniopterus schreibersii</i>
Geoffrey's Bat	<i>Myotis emarginatus</i>
Greater Mouse-eared Bat	<i>Myotis myotis</i>
Wolf	<i>Canis lupus</i>
Marbled Polecat	<i>Vormela peregusna</i>

1. b What is necessary to know for AA (data concerning the assessed area)

- Biological characteristics of the area

Target bird species for proposed SPA Tikvesh area

English name	Scientific name
Lammergeier	<i>Gypaetus barbatus</i>
Egyptian Vulture	<i>Neophron percnopterus</i>
Griffon Vulture	<i>Gyps fulvus</i>
Black Vulture	<i>Aegypius monachus</i>
Levant Sparrowhawk	<i>Accipiter brevipes</i>
Imperial Eagle	<i>Aquila heliaca</i>
Golden Eagle	<i>Aquila chrysaetos</i>
Booted Eagle	<i>Hieraaetus pennatus</i>
Bonelli's Eagle	<i>Hieraaetus fasciatus</i>
Peregrine Falcon	<i>Falco peregrinus</i>
European Roller	<i>Coracias garrulus</i>

1. b What is necessary to know for AA (data concerning the assessed area)

- Available quantitative data on the target features within possibly affected SPA/SCI
- **Lammergeier** (*Gypaetus barbatus*): 2 – 5 individuals yearly observed within the Tikvesh area
- **Egyptian Vulture** (*Neophron percnopterus*): \pm 3 nesting pairs within rocky area south of Orle and Vrapce cliffs
- **Griffon Vulture** (*Gyps fulvus*): about 23 individuals within Tikvesh area, including 6 – 8 nesting pairs per year on the cliffs near Kumanichevo, Vrapce and Koturski Dol near Orle Mountain

1. b What is necessary to know for AA (data concerning the assessed area)

- Available quantitative data on the target features within possibly affected SPA/SCI
- **Imperial Eagle** (*Aquila heliaca*): regular migrant using the feeding area near Bojanchishte
- **Golden Eagle** (*Aquila chrysaetos*): nesting on the cliffs of Vrapce and in Koturski Dol area near Orle
- **Peregrine Falcon** (*Falco peregrinus*): two nesting pairs on cliffs under Kumanichevo ridge and Orle Mountain

1. b What is necessary to know for AA *(data concerning the assessed area)*

- Recent field data concerning target features within the possibly impacted SPA/SCI ^{*1}
 - Verification of published data in field
 - Quantification of target features affected by the project
 - Ecological relations among the target features and in relation to habitats and ecological functions including traditional landuse

**1 One of the reasons why data from SDF are insufficient*