



Cultural Heritage Strategy for Murgia Materana Park

Gabi's Eleven

XV Cycle | ASP Summer School



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OUTLINE

1 - MURGIA MATERANA PARK

2 - STAKEHOLDERS ANALYSIS

3 - SCENARIO BUILDING and SWOT ANALYSIS

4 - FRAMEWORK and DECISION TREE

5 - MULTICRITERIA EVALUATION

6 - CONCLUSION

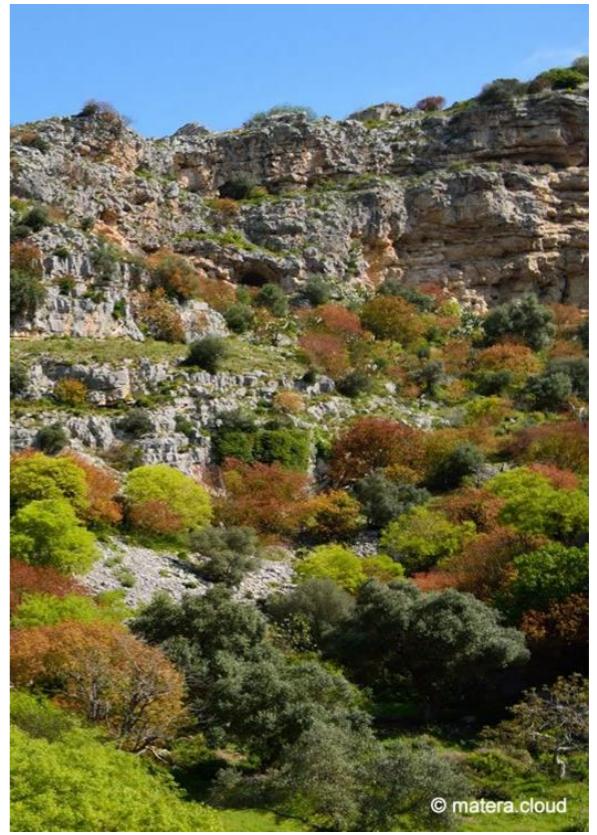
1 - MURGIA MATERANA PARK

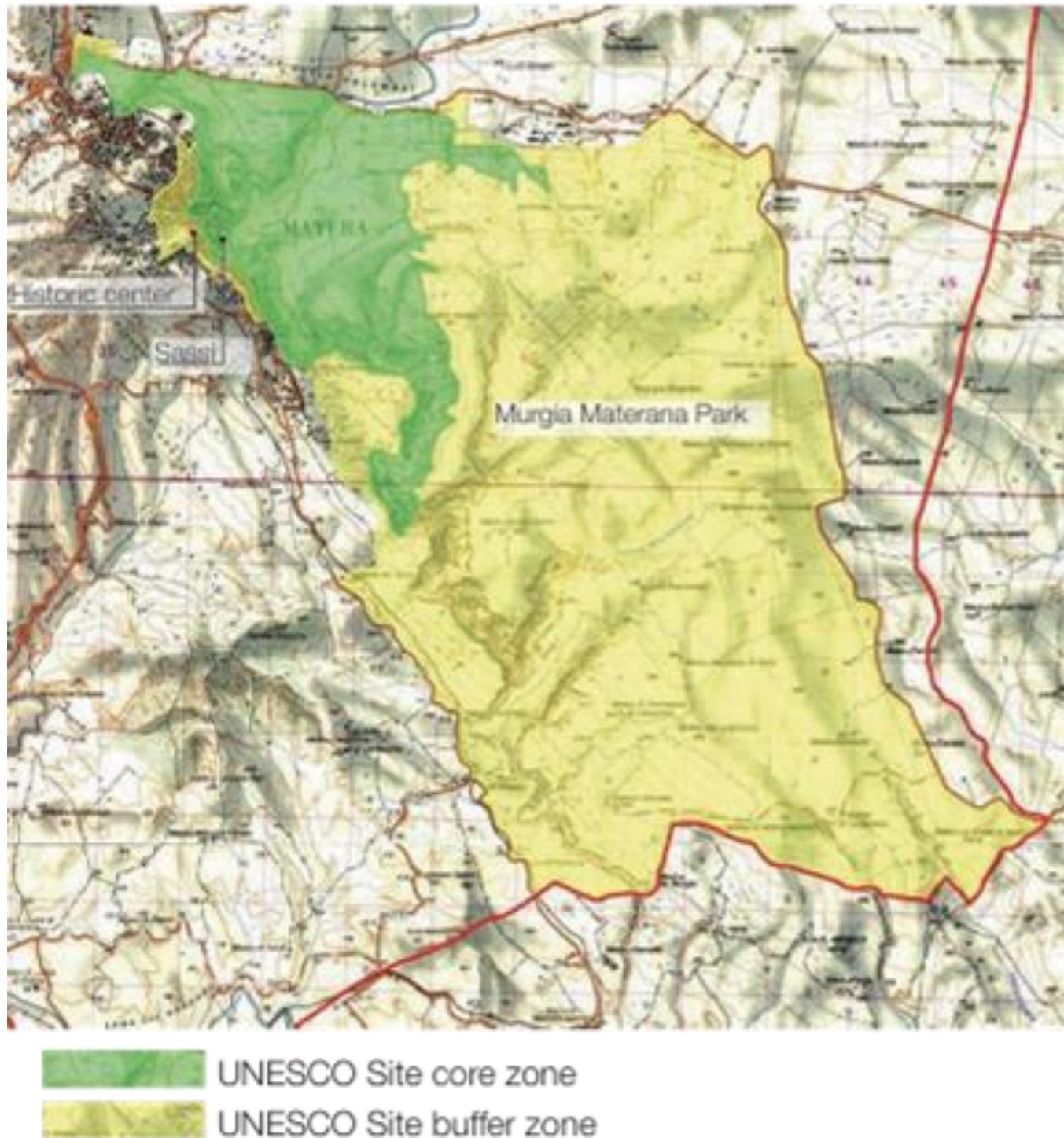
Murgia Materana Park

The Murgia National Park was established in 1990 with the name of Parco Regionale Archeologico Storico Naturale delle Chiese Rupestri del Materano (Natural Historic Archaeological Regional Park of the Rupestrian Churches of the Matera region). It was included in the UNESCO World Heritage List together with the Sassi di Matera. The park testifies the ancient relationship between man and nature in southern Italy.

The park is located between the towns of Matera and Montescaglioso, in Basilicata.

The Murgia is a calcareous highland plateau characterized by a soft rock called "tuff" (the correct name is limestone), which has played an essential role in the shapes taken on by the landscape, by drawing deep fault fissures, ravines, rocks and caves used by man who settled here since prehistoric times. The construction technique used is described as "architecture in negative", not actually building, but removing matter from the rock, in order to actually obtain architectural structures. That is why the Parco della Murgia presents Palaeolithic caves, villages dating back to the Neolithic, Bronze and Iron Ages, villages of Murgecchia, Murgia Timone and Trasanello: all prehistoric sites that tell us about human presence are mostly made up by shepherds and herdsmen. There are also ancient farms, sometimes fortified, cisterns, water troughs and wells.





There are over 150 rock churches in the Murgia National Park; all present different architecture and iconography, among these we can name San Leonardo, San Giacomo, Cappuccino vecchio and Santa Cesarea. They were made mostly in the early Middle Ages during a period that saw the intersection of the Greek Byzantine culture with the Latin world and they also are carved into the rock. What is most surprising is that even though they were born as places of worship, in the course of time the churches were also used for other purposes, being turned into homes or animal shelters when required. These churches also represent an important evidence of human presence, in particular relating to Benedictine monks, Longobards and Byzantines.

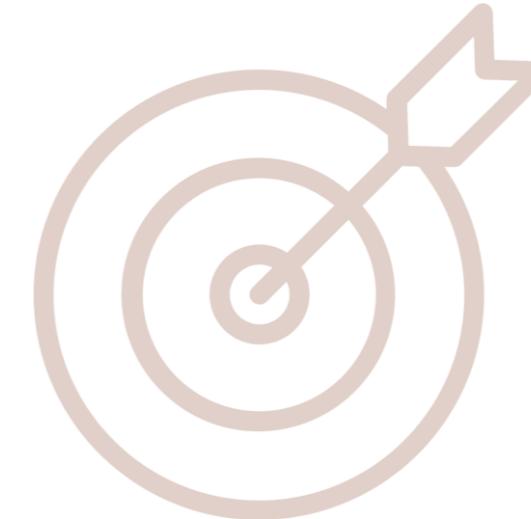
The Murgia National Park is characterised by a varied and wild nature which includes approximately 1,200 botanical species (one sixth of the national flora and a third of the region's): a remarkable number for an area of about 7000 hectares. In this magnificent place crossed by the river Bradano and the streams Gravina and Jesce, there are about a hundred rare and extremely rare species. Abundant wildlife testimonies to this amazing natural wealth: foxes, hares, porcupines, wild boars and wild cats along with important birds of prey such as the red kite, the Lanner falcon, the Egyptian vulture and above all the lesser Kestrel with spread wings, the small raptor which is the park's symbol.

2 - STAKEHOLDERS ANALYSIS



Objective of the project

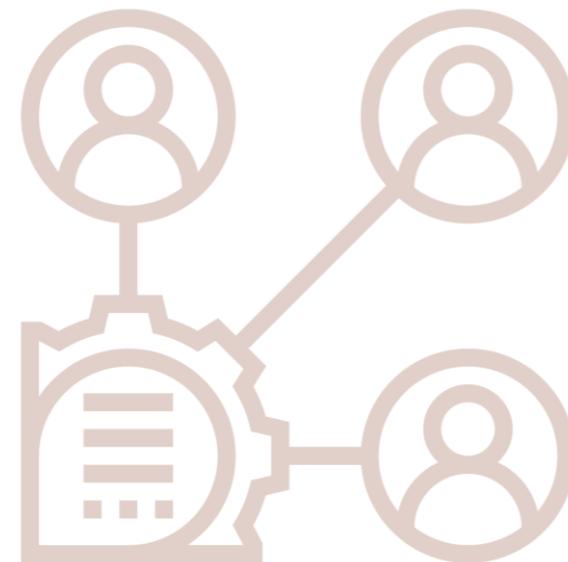
The aim of this work is to define a strategy for promoting the image of the park in order to raise the awareness of tourists and increase the number of visitors. In this plan a clear set of actions and strategies for the next 5-10 years will be defined, besides the evidences to support their impact and effectiveness will be given. Specific objectives of our plan are: to improve sustainability limiting traffic along park roads, to find a correct balance between maintenance costs and revenue generation, to enhance accessibility with a better park-city connection.



Stakeholders

A person, group or organization that has interest or concern in an organization.

Stakeholders can affect or be affected by the organization's actions, objectives and policies. Some examples of key stakeholders are creditors, directors, employees, government (and its agencies), owners (shareholders), suppliers, unions, and the community from which the business draws its resources.



- | | |
|--|---|
| 1 City of Matera | 15 CEA Environmental Education |
| 2 Matera-Basilicata 2019 Foundation | Centre of Matera |
| 3 APT , Regional Tourism Agency | 16 Local Building Enterprises |
| 4 ARPAB , Regional Environmental Agency | 17 Environmentalist Associations |
| 5 MiBAC , Superintendency for Cultural Heritage | 18 Nearby Cities , Ginosa and Montescaglioso |
| 6 MH , Matera Hotel of the Hilton Hotel Group | 19 LAMP , Local Association Materana Park |
| 7 FAL , Railway company - Ferrovie Apulo Lucane | 20 Forest Rangers |
| 8 AsSassiN , Association of Sassi Neighbourhood | 21 Public Transport |
| 9 CHeC , Cultural Heritage Consortium | 22 Basilicata Region |
| 10 FLaM , Friends of La Martella | 23 Apulia Region |
| 11 Murgia Materana Park | 24 Calabria Region |
| 12 AirBnB | |
| 13 UNESCO | |
| 14 National Museum "Domenico Ridola" | |

Dimensions of Interest vs. Type of Actors

Dimension of interests	Type of Actors				
	Politicians	Bureaucrats	Experts	Special interests	General Interests
International				2	13
National	24 23	24 23 5		7 14	17
Regional	22	20 22	4	6 3	
Local	1 18	11	9	12 21 15 16 19	10 8

Resources and Interests/values/preferences

1 | City of Matera

Resources:

Political, Legal and Economic

Interests/values/preferences:

- Enhance the tourism in the city
- Improve their image in the region
- Promote a higher quality of urban life
- More Transparency in the management of municipal budget and financing
- Building citizens consensus

2 | Matera-Basilicata 2019 Foundation

Resources:

Cognitive and Economic

Interests/values/preferences:

- Enhance the regional territory in a international context
- Promote the city with an environmental/cultural project
- Increase tourism

3 | APT, Regional Tourism Agency

Resources:

Cognitive

Interests/values/preferences:

- Higher visibility and competitiveness of tourism offer
- Increase regional hospitality

4 | ARPAB, Regional Environmental Agency

Resources:

Cognitive

Interests/values/preferences:

- Monitoring and control of risk factor about environmental protection
- Promote culture and behavior in line with the principles and objectives of sustainable development

5 | MiBAC, Superintendency for Cultural Heritage

Resources:

Legal, Economic and Cognitive

Interests/values/preferences:

- Preservation, safeguard and enhancement of cultural heritage
- Promotion of cultural activities in all its forms

6 | MH, Matera Hotel of the Hilton Hotel Group

Resources:

Economic

Interests/values/preferences:

- Profit from tourists' allocation
- Attract more tourists
- Promote the city and gain visibility
- Establish a good relationship with the City of Matera

7 | FAL, Railway company - Ferrovie Appulo Lucane

Resources:

Economic and Cognitive

Interests/values/preferences:

- More efficiency and improvement of the quality of rail services in Puglia and Basilicata
- Win the contract for public transportation to the park

8 | AsSassiN, Association of Sassi Neighbourhood

Resources:

Political and Cognitive

Interests/values/preferences:

- Maintain the authenticity of the neighbourhood avoiding excessive touristification
- Keep housing prices affordable for the local community
- Prefer to have a direct path to the Murgia Park

9 | CHeC, Cultural Heritage Consortium

Resources:

Cognitive

Interests/values/preferences:

- Organize resources to enhance the cultural heritage of the region
- Take care that the cultural heritage interests are preserved

10 | FLaM, Friends of La Martella

Resources:
Political and Cognitive

Interests/values/preferences:
Profit from the trickle down effect of the renewed attractiveness of the historical city center
Appreciation of their own assets
Better connection with the Murgia Park

11 | Murgia Materana Park

Resources:
Legal and Cognitive

Interests/values/preferences:
Raise awareness of the potential of the park
Promotion of the park
Improve green accessibility and connections with the city
Full exploitation of the potential managing maintenance costs and revenue generation

12 | AirBnB

Resources:
Economic

Interests/values/preferences:
Attract more tourists
Promote the city
Gain visibility
Establish a good relationship with the City of Matera
Pay fewer taxes
Collaborate with agritourism inside the park

13 | UNESCO

Resources:
Cognitive and Economic

Interests/values/preferences:
Preserve the cultural heritage of the site
Promote education in the site for tourism

14 | National Museum “Domenico Ridola”

Resources:
Cognitive

Interests/values/preferences:
Conservation and enhancement of archeological heritage
Diffusion of historical culture
Improve the income through the visitors

15 | CEA Environmental Education Centre of Matera

Resources:
Cognitive

Interests/values/preferences:
Promote a sustainable use of territory
Using territory for educational purposes

16 | Construction Companies

Resources:
Cognitive and Economic

Interests/values/preferences:
Interested in building new and sustainable infrastructures (roads...) to better connect the park with the city and points of interest
Interested in winning the maintenance contracts
Employ local workforce

17 | Environmental Associations

Resources:
Political and Cognitive

Interests/values/preferences:
Keep the environment clean
Avoid extreme alteration of the environment
Protect endangered species
Protect the natural and building heritage

10 | FLaM, Friends of La Martella

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Political and Cognitive

Interests/values/preferences:
Profit from the trickle down effect of the renewed attractiveness of the historical city center
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Protect endangered species
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18 | Nearby Cities (Ginosa and Montescaglioso)

Resources:
Political and Economic

Interests/values/preferences:
Enhance the regional tourism
Balance the tourism in the region so that every city can have profits from the cities and divide tourism in order to not

19 | LAMP, Local Association Materana Park

Resources:
Cognitive

Interests/values/preferences:
Mantain a quiet and save environment
Increase their incomes

20 | Forest Rangers

Resources:
Legal and Cognitive

Interests/values/preferences:
Protection of the park
Organized flow of tourists
Financing park initiatives

21 | Public Transport

Resources:
Economic and Cognitive

Interests/values/preferences:
Improvement of the connection park-city
Exploitation of the data based on flows of people

22 | Basilicata Region

Resources:
Political, Economic and Legal

Interests/values/preferences:
Promote the city of Matera and the whole region
Improve existing infrastructures and build new ones
Build sustainable and green infrastructures
Reduce the traffic congestion
Green tourism (trekking, climbing...)
Enhance habitat and microhabitat

23 | Apulia Region

Resources:
Political, Economic and Legal

Interests/values/preferences:
Tourism in Basilicata can result in more tourism in Apulia
More tourists may land in Bari when visiting Matera and its park
Build new and improve existing infrastructures to connect the region with Basilicata
Interest towards the environment and sustainability

24 | Calabria Region

Resources:
Political, Economic and Legal

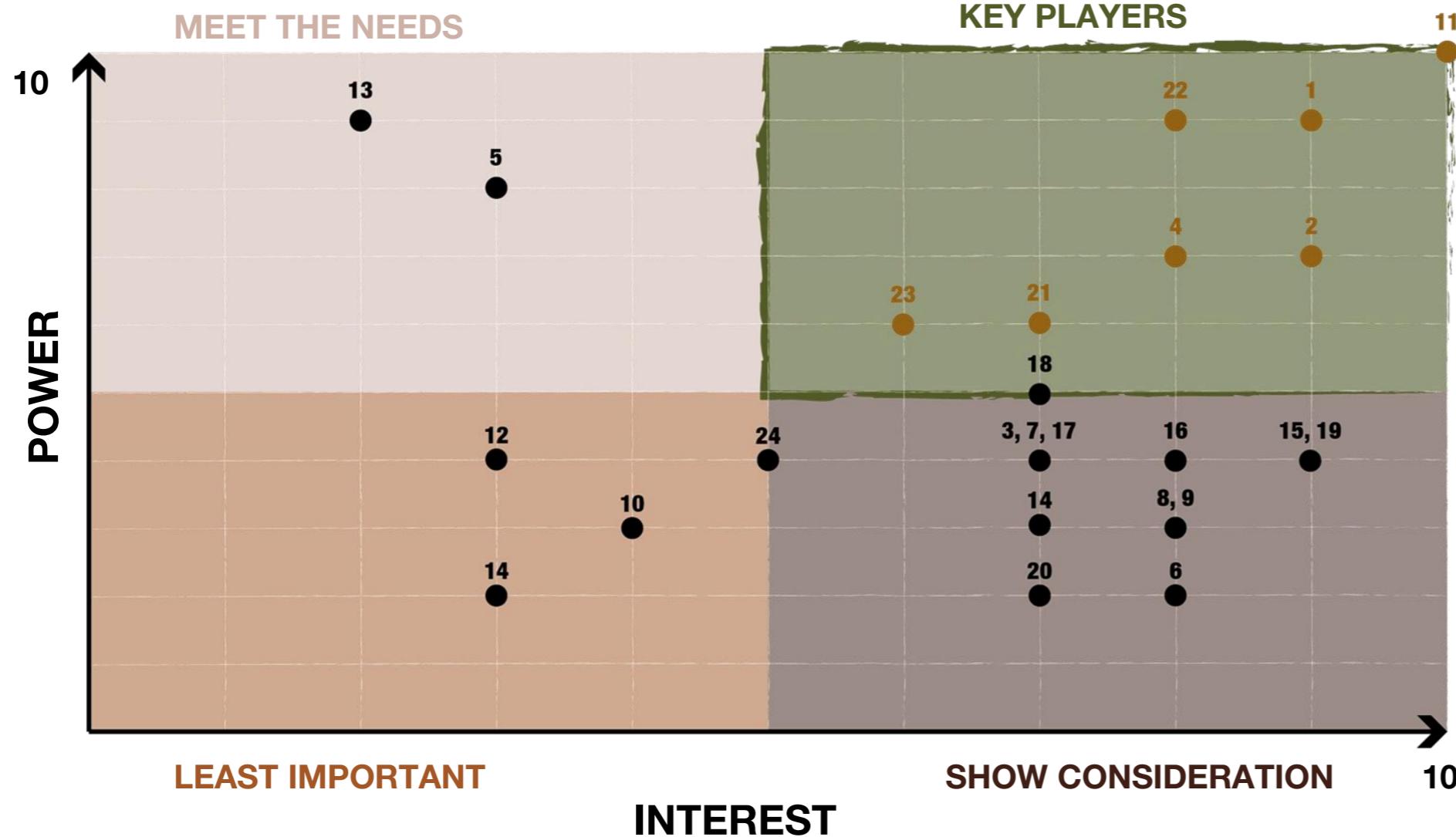
Interests/values/preferences:
Tourism in Basilicata can result in more tourism in Calabria
Build new infrastructures to connect the region with Basilicata
Interest towards the environment and sustainability



Interest Power Matrix

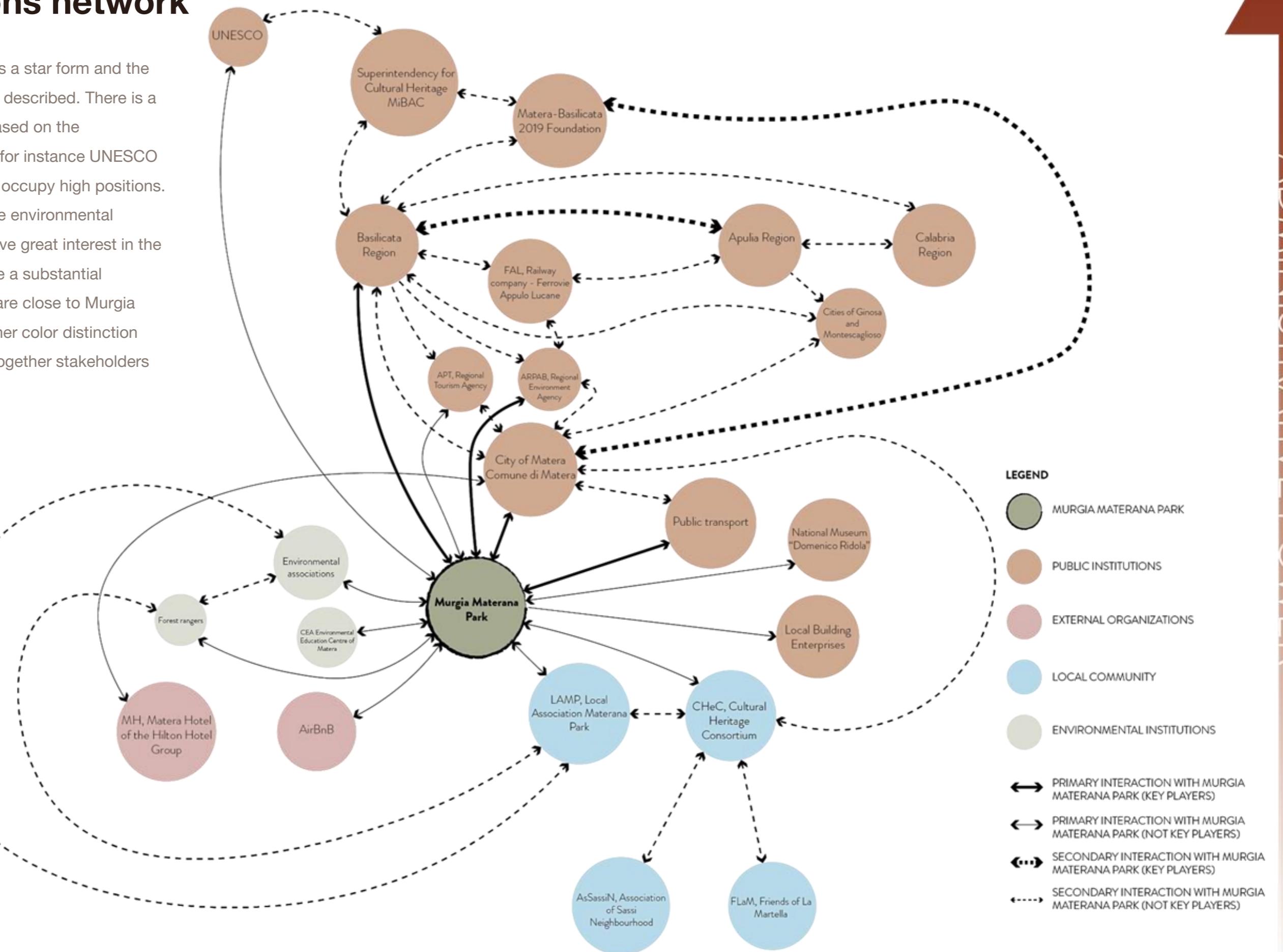
There are different methods and different classification models that can be used for stakeholder analysis.
We have chosen to use the Interest Power Matrix which implies the following stakeholder management methods:

- Stakeholders with high power and high interest should be managed with the most care.
- Stakeholders with high power and low interest must simply be satisfied with their expectations.
- Stakeholders with low power and high interest must be kept informed about the progress of the project.
- Stakeholders with low power and low interest simply need to be monitored to see if their attitude changes over time.



Interactions network

The social network has a star form and the criteria used is hereby described. There is a hierachic structure based on the administrative power, for instance UNESCO and Basilicata Region occupy high positions. Other stakeholders like environmental associations which have great interest in the matter but do not have a substantial administrative power are close to Murgia Materana Park. A further color distinction was made to cluster together stakeholders based on their nature.



3 - SCENARIO BUILDING and SWOT ANALYSIS

STEEP and SWOT

A STEEP analysis is based on Social, Technological, Economic, Environmental and Political factors that have an impact on an organization. A STEEP analysis can be combined with a SWOT analysis, identifying Strengths, Weaknesses, Opportunities and Threats relatively to the fields established by the STEEP. This combination of the two helps to predict what might happen in the future considering how stakeholders may react to changes.

STEEP components		Strengths	Weaknesses	Opportunities	Threats
Society	Number of inhabitants	Region is attracting people from the nearby inland mountain and rural areas	Percentage increase of local population is decreasing	Create programs to enhance diversity and co-create with the new population that is arriving in the city that bring new knowledge	If the city lacks in services and infrastructure it can be a problem to provide a good quality of life for the population; lack of resources from municipality
	Ageism of population	Aging population have spare time and a lot of knowledge from the region, its culture and story to tell	Working age population is lacking in Matera	Organize programs of volunteers with the old population so they can participate in projects inside the park enhancing cultural heritage and protecting it	City and park infrastructure needs to adapt and be safe to attend the needs of the old population
	Wellbeing	Matera has the best wellbeing of the south of Italy (source: Università della Sapienza Roma)	Index is still low when compared to the northern part of Italy	Use the wellbeing index to promote a better image of the city in the region and also organize actions to increase it	-
	Education	Programs in the city related to education are growing and gaining a lot of interest from the municipality	-	Use this programs inside the Park to enhance the culture heritage and teach new generations about the local history	Park infrastructure needs to be adapted to receive the programs
	Internationalisation	Matera 2019 is inviting different people from all over the world to participate in the cultural scene of the city	-	Innovate and bring new perspectives to the city	Local culture can be lost
	Health	Murgia Materana Park offers a healthy environment for physical activities	In the index of health Matera is in 85	Infrastructure of the park can improve the health quality of the population organizing itself to hold events of circuits, yoga, trekking, hiking	Infrastructure of the park needs to be adapted

STEEP components		Strengths	Weaknesses	Opportunities	Threats
Technology	Web info	The events and all the information related to the park are available on different web pages. Thanks to that it is possible to promote the organization of cultural activities in the park	Some web pages do not allow the choice of the language	Improve in order to facilitate the accessibility to the information. Allow the choice of the language	-
	Signage	Presence of signals that help the tourists orienting	The signals are not enough and could be misleading	Interactive signage: interactive monitors located in strategic points that show possible paths and allow to modify the language	-
	Interactive System "Digital Loggia" and Totem	-	Lack of digital devices within the park	Their aim is to attract tourists and to improve and facilitate their experience. The Totem can describe the cultural and historical aspects of the park. The Digital Loggia could be located in strategic points of the entire region Basilicata in order to encourage tourism and provide info regarding the accessibility of the Murgia Park. Potential start-ups can intervene in the digitalization of the park	Those systems could be expensive and the Loggias require facilities and custodians
	Accessibility	The park is easily accessible on foot, through a suspension bridge, coming from Matera City, by car, by bus with "Matera city tour" or with private tourist agencies	Lack of organization. Absence of parking lots	Improve the existing bus services. Create bike sharing services. Improve the maintenance of the existing paths. Create different parking lots	The presence of too many tourists could compromise the preservation of the environment

STEEP components		Strengths	Weaknesses	Opportunities	Threats
Environment	Water	Presence of a developed water network due to the historically rural nature of the territory, presence of fountains distributed throughout the territory	The watercourses within the protected area (Jesce and Gravina streams) are highly polluted due to the presence of industrial, agricultural and zootechnical discharges and lack of adequate sewage and purification plants	Modernization of purification implants and water and sewage networks	Emergence of new sources of water pollution, such as plastics and waste
	Biodiversity	Activity by the regional observatory of natural habitats and wild fauna for the monitoring of endangered species (canis lupus, etc.) and protection of amphibians and reptiles	Dispersion of actions and studies due in part to the lack of a specific management plan for special protection areas	Providing opportunities for displaced species to relocate, providing open space zones around critical habitats in order to increase resilience	Pollution due to human activities in the park and nearby
	Waste management	Weekly intervention of ecological operators	Night visitors often leave personal effects and rubbish	Communication campaigns and environmental education, greater use of ecological operators, introduction of night closure periods	Lack of intervention on the part of the municipality of Matera, given the already numerous reports
	Human influence on the ecosystem	-	Noise pollution and improper behavior by invasive visitors	Increase awareness program to change visitor behavior	The lack of intervention may increase the noise and waste pollution of massive tourism, disturbing the biodiversity
	Natural calamities	Existence of a monitoring and surveillance program conducted by park guards with the contribution of many environmental associations (Legambiente di Matera)	High hydrogeological risk, frequent detachment of blocks in areas of high tourist attendance	Continuous monitoring in areas with higher risk active defense interventions against detachment of blocks (eg removal of unstable elements, safety nets, etc.)	Increased maintenance costs, lack of qualified personnel for surveillance activities, unpredictability of natural disaster phenomena

STEEP components		Strengths	Weaknesses	Opportunities	Threats
Economics	Growth	Cumulative GDP has been growing by more than 7% in the last 2 years, much higher than regional average	-	Tourism growth may lead to higher revenues and growth rate both for the city and the park	Optimal integration between the different actors promoting the city may lack, thus endangering tourism growth; economic and currency stability are uncertain and may slow down the arrival of tourists from other European countries
	Employment	-	Employment rate in the city is traditionally low and related to low paid primary activities	Being the city nominated Capital of Culture new jobs will be created, even in the park. By installing new infrastructures, local building enterprises and public transportation can hire locals and workers	Lack of qualified workforce may slow down and be an obstacle to new building opportunities. Italians from South Italy generally want to go abroad for work because salaries are higher and there are generally more opportunities
	Housing prices	-	The city of Matera has historically low housing prices	Low prices are an opportunity to attract more tourists to come to the city and rent houses and for investors to buy buildings and land	The area is subject to earthquakes, which can limit the interest of investors and tourists; risk of gentrification and excessive urbanization of the park.
	Labor cost	-	Labor cost is low and this is negative for Matera's inhabitants, since they lack the incentive to work	Given the growth following the nomination of Matera as 2019 European Capital of Culture, low labor costs are an opportunity for employers (including the park) to employ local labor force	Employers may prefer to hire unskilled workforce paying them less instead of skilled workers

STEEP components		Strengths	Weaknesses	Opportunities	Threats
Policy	International Organizations (UNESCO)	<p>It draws international attention to the preservation of the site, it enhances an increase of tourism and eventually brings funds and prestige to the site.</p> <p>Priority of intervention. Valorization and support of the site</p>	-	<p>Dichotomy and continuity between the core and the buffer zone. Funding for UNESCO sites (law 77/2006).</p> <p>Exploit the WHS status to increase the traditionally low level of occupation</p>	<p>Too much branding can lead to the loss of the real identity of the place, since the site risks being devalued.</p> <p>Additionally, invasive tourism might push the local population to move somewhere else, with serious consequences (like hydrogeological ones) due to absence of local inhabitants</p>
	Local institutions	Quicker decisional procedure and problem response	Centrality of the power. Not enough number of involved experts	Easier researches of in loco problems	Subjective decisions taken to give advantageous not only to the park but also to the local managing authority
	National and regional institutions	Collaboration between Apulia and Basilicata for the growth of the park. Conformity with the national legislation.	Longer institutional procedures. Regional parks (as the MMP) are not suitable for many national contests.	Thank the huge area of the MMP, it can be selected for interventions destined to bigger natural parks.	National legislation might affect the credibility and the effectiveness of some local laws.
	Non-governmental organizations	Volunteering. Funding. Park control. Formation courses.	-	Additional private funding. Support from several volunteering programs.	Exploitation of the park for private advertisements. Too many external actors threaten unity of purpose.

Objectives, Actions and Time Horizon

Three scenarios were considered in our analysis. Every action includes a time horizon length, which shows the amount of time needed to complete the action.

- **The Baseline** scenario is a representation of the state of the art, where the objectives and consequent actions are those that aim to keep the park as it is.
- **The Balance** scenario states what should be done to improve the condition of the park relatively to the needs and objectives provided by our client.
- **The Strategic** scenario introduces our strategy proposal taking into consideration the expectations and needs of the stakeholders involved in the project, with the final aim to create great value for society.

SCENARIO	OBJECTIVES	ACTIONS	TIME HORIZON		
			Short 5 years	Medium 5-10 years	Long Over 10 years
Baseline	i. Keep the number of tourists of the park manageable and increase the number of those interested in the natural sphere of the park.	i.1. Ensure funding for the park dedicated to tourism from the relevant players (Basilicata Region, MiBAC, ...).	<i>Indefinite</i> Note: Actions in the baseline scenario have to be intended just as activities aimed to maintain the current situation and that are already adopted		
	ii. Keep the maintenance of the park acceptable	i.2. Respect the safety levels in relation to earthquakes and hydrogeological risks.	<i>Indefinite</i> Note: as above		
		ii.1. Maintenance interventions for paths and diversifications of tracks for different natural and cultural experiences.	<i>Indefinite</i> Note: as above		



Storyline for Baseline Scenario

Murgia Materana Park is characterized by a varied and wild nature with thousands of botanical species. This is why it is important to enhance the tourism by making people more aware of the natural beauty that the park has to offer. Therefore, ensuring the existing funding for the park dedicated to tourism for the following years is crucial, maintaining it and also continuing to respect safety levels while preserving natural resources.

Paths inside the park must undergo usual maintenance and the preservation of our archeological artifacts should keep going. To provide a different, low cost and richer experience for tourists, especially those in love with adventuring, existing paths can be diversified with colors and names.

In conclusion, there is no need to invest more funds and make great changes to the park since the current objectives and actions are enough to keep providing a positive experience to the community while protecting the nature inside the park.

SCENARIO	OBJECTIVES	ACTIONS	TIME HORIZON		
			Short 5 years	Medium 5-10 years	Long Over 10 years
Balance	i. Prepare to host an increased number of tourists	i.l. Incentivize the development of reception structures (traditional restaurants and toilets) through financing to existing local businesses and building enterprises (supported by the Regional government and international institutions), thus exploiting the current economic growth			
		i.2. Improve access ways to the park: restructure, manage legally and provide signs to the parking lot and within the park			
		i.3. Exploit more funds from NGOs, local and international institutions for the park, exploiting the support from UNESCO			
	ii. Increase the attractiveness of the park	ii.1. Sustain and promote cultural events inside the park (concerts and folkloristic fairs) exploiting the growth of tourists, to gain additional sources of revenues			
		ii.2. Involve local schools' pupils to visit and serve as guides to international tourists in the park			
		ii.3. Build fences and cameras in the most sensible areas subject to waste abandoning to limit the problem.			

SCENARIO	OBJECTIVES	ACTIONS	TIME HORIZON		
			Short 5 years	Medium 5-10 years	Long Over 10 years
Balance	iii. Increase safety levels of the park	iii.1. Improve the access bridge's stability against hydrological risks.			
		iii.2. Improve the safety levels as regards earthquakes and hydrogeological risks (provide signage for earthquake evacuations and reinforce the rivers' levees)			
		iii.3. Provide lights inside the park with sustainable lampposts.			



Storyline for Balance Scenario

Despite being one of the most beautiful Italian natural parks, Murgia Materana Park has been showing some limits related to tourism. To tackle these issues and provide a balanced solution in the short term, we aim to prepare the park for hosting a greater number of tourists, increase its attractiveness and improve the safety levels.

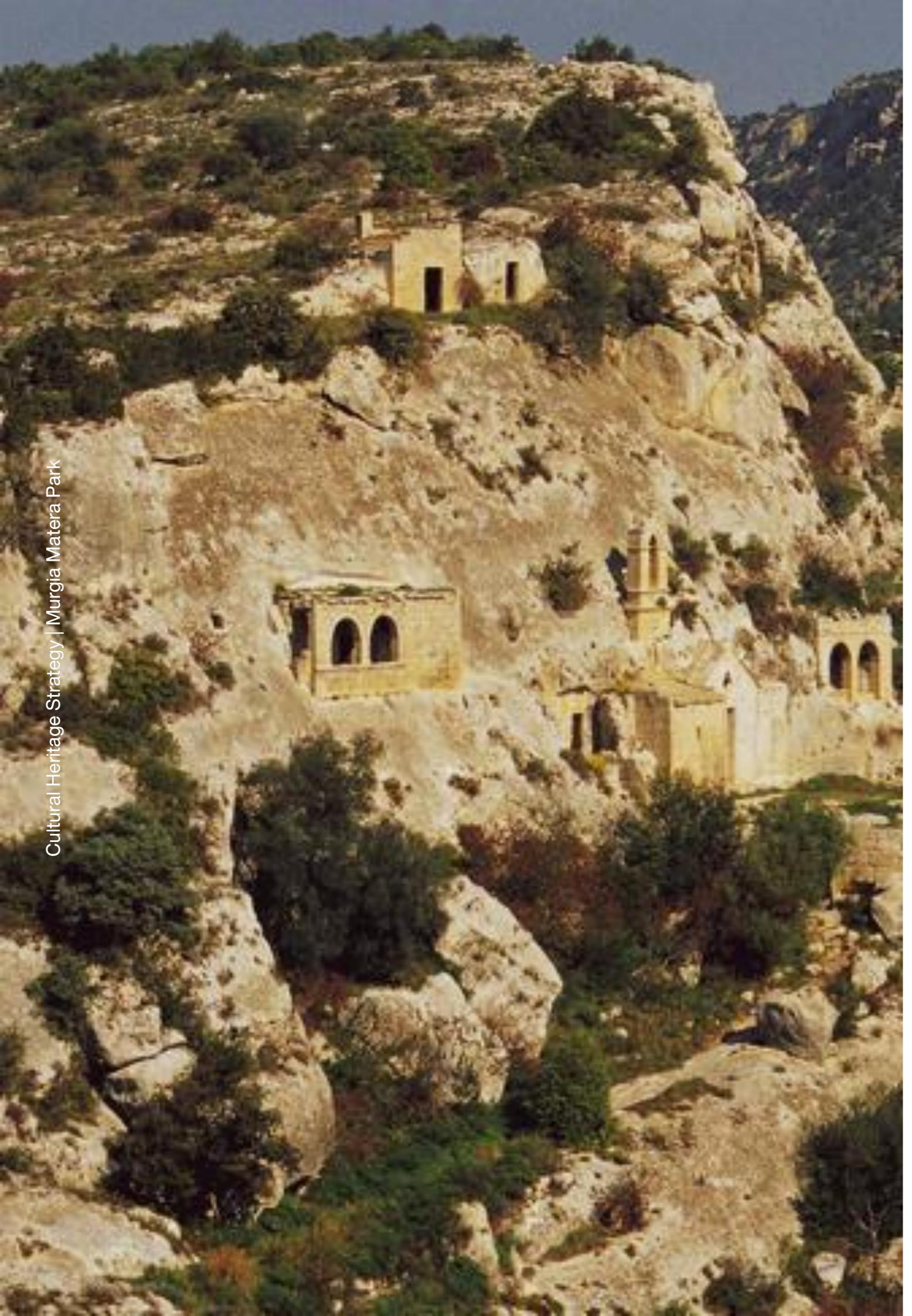
We plan to use existing funds from NGOs and UNESCO to incentivize traditional businesses inside the park leading to the economic development of Matera and the exploitation of the increased flux of tourists. Moreover, besides improving the current signage to provide better guidance, we plan to restructure the parking lot and manage it legally.

We aim to make the Park livelier for both locals and outsiders, hosting traditional fairs and concerts and thus increasing revenues. Local students will serve as tour guides, improving the education towards the city's cultural heritage and reducing operating costs of the park. Fences and cameras will be installed in sensitive points to limit the problem of waste abandoning.

In conclusion, self-sustainable lamp posts will be added, the pedestrian bridge will be stabilized against hydrogeological risks and signage will be added for evacuation measures in case of earthquakes.

SCENARIO	OBJECTIVES	ACTIONS	TIME HORIZON		
			Short 5 years	Medium 5-10 years	Long Over 10 years
Strategic	i. Enhance the cultural heritage of the park	i.1. Start a volunteer program in collaboration with other stakeholders like the CEA			
		i.2. Engage ageing population in the volunteer program as storytellers who involve tourists in the park history and traditions			
		i.3. Create program with different eco-activities that can both bring new tourists and also preserve the park environment			
	ii. Provide a full cultural experience	ii.1. Create partnerships with local communities and young start-ups in order to create this experience			
		ii.2. Create synergy with the historical museum of Matera through the installation of monitoring sensors for archaeological sites, interactive information panels, and an integrated museum+park ticket			
		ii.3. Establish a partnership with the Sassi district to lure more tourists to the park (billboards and information points)			

SCENARIO	OBJECTIVES	ACTIONS	TIME HORIZON		
			Short 5 years	Medium 5-10 years	Long Over 10 years
Strategic	iii. Achieve park environmental sustainability	iii.1. Provide an alternative road to link the city of Matera and the park to reduce overmotorization of the existing road.			
		iii.2. Introduce waste collection in strategic points, in order to recycle waste and keep the park clean			
	iv. Better the accessibility of the park	iv.1. Prepare infrastructure of the park to provide new experiences, for example with interactive signages along the main paths			
		iv.2. Creation of new bridges in safer points to manage the fluxes of tourists			
	v. Achieve park economic sustainability	iv.3. Provide small buses, in collaboration with local transport company, and barrier-free paths to allow tourists with disabilities to easily reach the panoramic point			
		v.1. The economic sustainability will be reached by reducing operating costs through the use of volunteers (aging population and students) and new sources of revenues will be added through new events (concerts and traditional fairs)			
	vi. Increase the interregional cooperation between Basilicata and nearby regions to achieve common aims	vi.1. Improve the signage that indicates the presence of the park in other nearby attraction points (both Basilicata and Puglia, e.g. Bari airport)			



Storyline for Strategic Scenario

Murgia Materana Park is one of the most beautiful of its kind in Italy and our aim to create great value for society out of it, leading to enhanced tourism, always putting nature first. Richer experiences and a solid sense of community are key to the future of the park. We plan to create volunteer programs that will engage both locals and internationals to work together as tour guides transmitting our history to future generations and enhancing our cultural heritage. This will result in great education for tourists, an engagement of locals and internationals, leading to the generation of revenues for the park. The creation of this community in the next 5 years will only be possible through the synergy between different actors.

“Tourism for all” is our motto, especially when it comes to accessibility to the park. The current infrastructure is just the absolute minimum. We plan to tackle it in 10 years using the revenue generated from the increased number of tourists. New connections to the park will be created through the introduction of electric buses for short-medium trips with a consequent traffic improvement. All improvements will be done considering the needs of disabled people and of the environment. Self-sustainable smart signage to provide path signaling, collect data and possibly function as beacons for an enhanced navigation experience inside the park will be implemented. Tech totems to make people aware of the beauties of the park will be installed in the nearby cities, the path to the existing bridge and to the Belvedere Murgia Timone will be paved and the levees of river will be reinforced.

Storyline Revision

After a thorough analysis, all the actions of the three scenarios are in line with the former analysis:

- The actions of the **baseline scenario** result coherent with the time horizon assigned to them.
- The actions of the **balance scenario** are heterogeneously distributed in time because of the diversity and amount of problems that should be tackled.
- As designed, the **strategic scenario** builds upon mid-term actions with few exceptions.

4 - FRAMEWORK and DECISION TREE

Criteria definition 1.1



1 | City of Matera

Enhance the tourism in the city; Improve their image in the region; Promote a better life for citizens and local community; Make a correct use of the municipality budget; Maintain the citizens' support
 → *Social Sustainability; Economic Sustainability; Tourism/Attractiveness*

2 | Matera-Basilicata 2019 Foundation

Enhance the regional territory in an international context; Promote the city with an environmental/cultural project; Increase tourism
 → *Tourism/Attractiveness*

4 | ARPAB, Regional Environmental Agency

Monitoring and control of risk factor about environmental protection; Promote culture and behavior in line with the principles and objectives of sustainable development
 → *Environmental Sustainability; Social Sustainability*

21 | Public Transport

Improvement of the connection park-city; Exploitation of the data based on flows of people
 → *Accessibility; Environmental Sustainability; Economic Sustainability*

22 | Basilicata Region

Promote the city of Matera and the whole region; Improve existing infrastructures and build new ones; Build sustainable and green infrastructures; Reduce traffic congestion; Green tourism (trekking, climbing...); Enhance habitat and microhabitat
 → *Economic Sustainability; Environmental Sustainability; Social Sustainability; Tourism/Attractiveness; Accessibility*

Criteria definition 1.2



STEEP and SWOT
ANALYSIS

Society

increase the involvement and education of the community, old population, students; increase internationalisation
 → *Social sustainability; Attractiveness*

Technology

improve infrastructures for physical activities inside the park
 → *Social Sustainability*
 improve the website, the signals and install interactive totems
 → *Accessibility; Tourism; Attractiveness*

Improve bus services and create bike sharing, improve maintenance of the existing paths, create parking lots
 → *Accessibility, Environmental Sustainability*

Environment

Guarantee water, species and land protection; activate ecological measures;
 → *Environmental Sustainability*

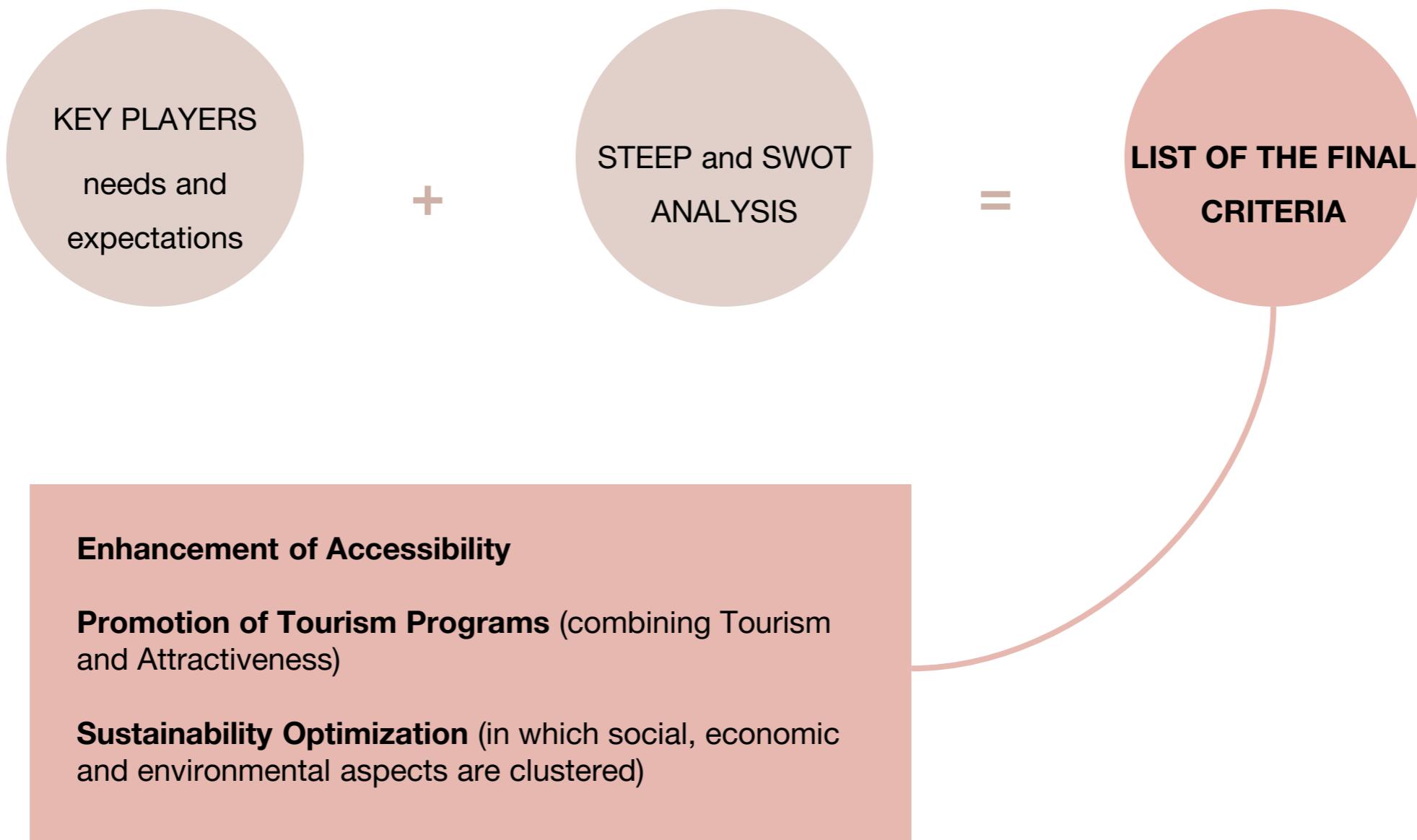
Economics

Increment the revenues from tourism and the employment
 → *Economic Sustainability*

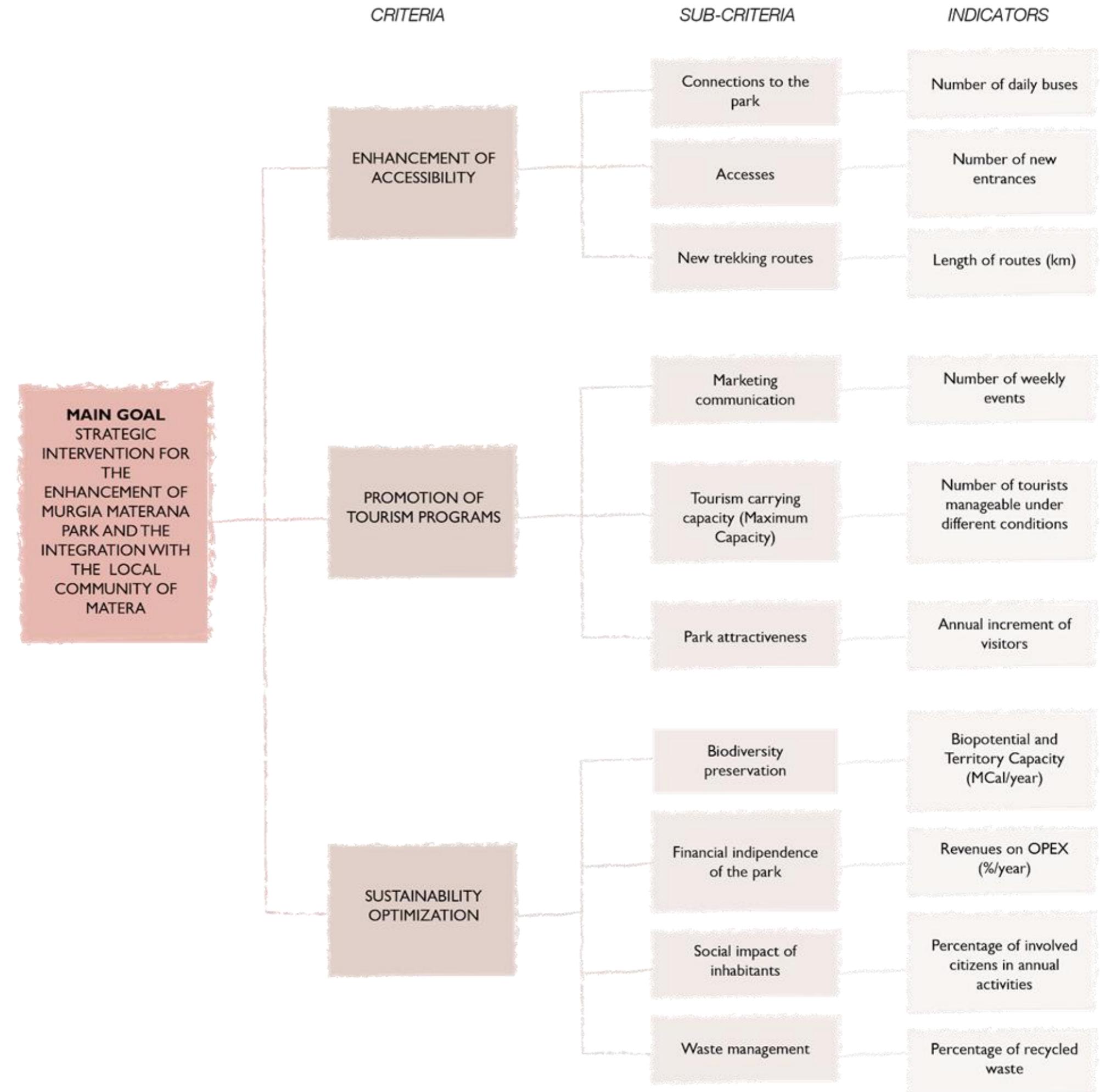
Policy

Support from volunteering programs from NGOs, partnerships with local, regional and national institutions to have fundings
 → *Economic Sustainability*

Criteria definition 1.3



DECISION TREE

Decision tree

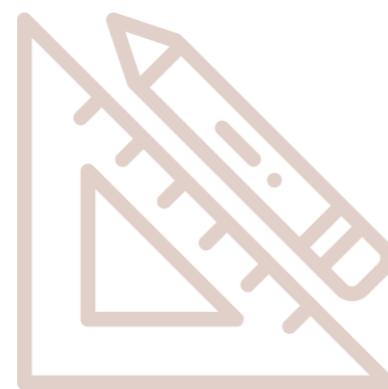
Definition of the unit of measurement

The unit of measurement for each indicator can be read in the decision tree. If the unit is not specified it means the indicator has no specific units (e.g. "number of daily buses"). In many cases, one could choose to use either a qualitative or a quantitative scale. For instance, the annual increment of visitors can be represented by both:

→ qualitative: low-medium-high

→ quantitative: using a percentage

We have chosen to use a quantitative scale to capture the precise percentage increment and observe it through the years since it is a relevant indicator for our strategy as one of our goals is tourism enhancement.



ENHANCEMENT OF ACCESSIBILITY

Number of daily buses

Number of new entrances

Length of routes (km)

PROMOTION OF TOURISM PROGRAM

Number of weekly events

Number of tourists manageable under different conditions

Annual increment of visitors

SUSTAINABILITY OPTIMIZATION

Biopotential and Territory Capacity (MCal/year)

Revenues on OPEX (%/year)

Percentage of involved citizens in annual activities

Percentage of recycled waste

Performance fact-sheet

1

CRITERIA → Promotion of Tourism Programs

General Aim → Improve the image of the park through different marketing initiatives in order to increase the number of visitors and sustain its economic growth.

SUB-CRITERIA → Park Attractiveness

This criterion will be measured through the annual increment of tourists, so as to assess the yearly increase in the attractiveness of the park.

UNIT OF MEASUREMENT

% Increment year n = (# of tourists year_n - # of tourists year_{n-1})/# of tourists year_{n-1}

MEASUREMENT

Based on the information about the average number of visitors to the park (www.parcomurgia.it), we can estimate an average of 1660 tourists/month, and therefore about 20 thousand visitors per year. During the last year, the number of arrivals amounted to 892.087, with a +13,39% with respect to 2017. Therefore, we can estimate that $20.000/892.087=2,24\%$ of tourists going to the city will also be attracted to the park.

Based on this, we can assume that in the baseline scenario, this retention index won't vary, and we'll have the same percentage of tourists attracted to the park.

Assuming a constant yearly increase of tourists to Matera (+13,39%), we can estimate the increase for the baseline scenario:

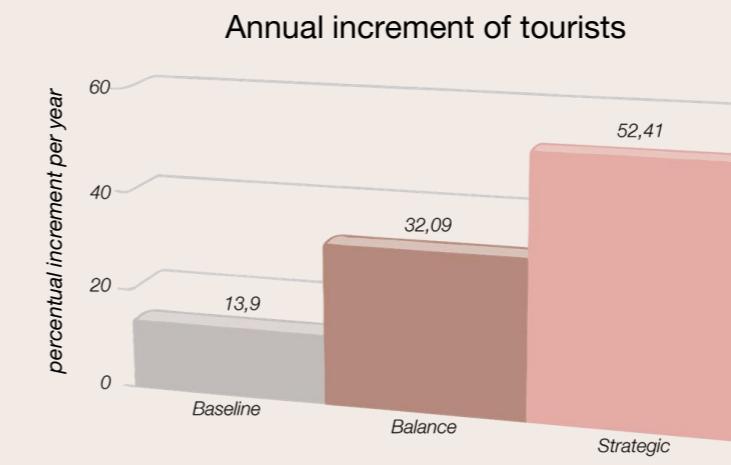
Baseline → 13,39%

For the Balance scenario, we can assume a retention index slightly increased (2,6%):

Balance → 32,09%

For the Strategic scenario, we can assume a retention index rising to 3%, as a result of the actions previously identified:

Strategic → 52,41%



Performance fact-sheet

2

CRITERIA → Promotion of Tourism

Programs

General Aim → Improve the image of the park through different marketing initiatives in order to increase the number of visitors and sustain

SUB-CRITERIA → Marketing Communication

The number of weekly events is a crucial parameter to measure the marketing and promotion efforts of the park.

UNIT OF MEASUREMENT

Number, n°

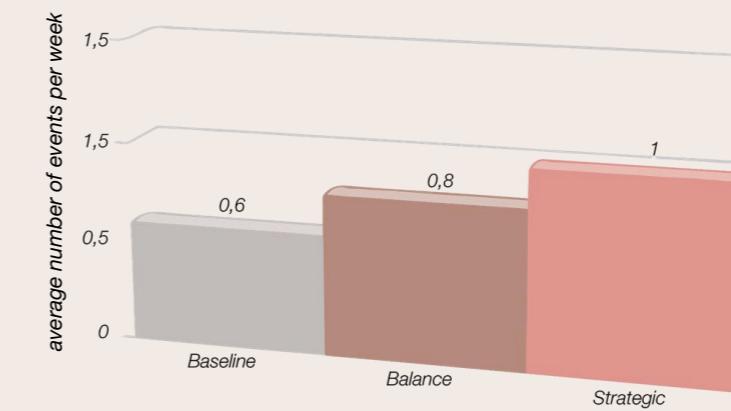
MEASUREMENT

We have extrapolated the number of events programmed in the years 2010, 2011, 2012, 2013 from the events section of the website <http://www.parcomurgia.it>. The average value of events in a year is nearly 32 for this period, therefore the weekly number of events is nearly 0,6. In 2019, 8 events are reported in a period of nearly three months (Source: http://www.parks.it/parco.chiese.rupestri.materano/man_dettaglio_man.php?id=2594) corresponding to a weekly number of events of 0,6-0,7 that shows that the value of this indicator has not increased during these years.

From these data we can say that in the **baseline scenario** the weekly number of events will be the same (0,6). In the **balance scenario** a slight increase is expected (0,8), while in the **strategic scenario** the number will increase to at least one event per week.

In order to reach this number we're planning to establish days of outdoor play designed to connect kids and families with their local national parks. Moreover we aim at establishing new partnerships in order to host film festivals, music concerts, sport competitions and wedding ceremonies.

Events hold in the park



Performance fact-sheet

3

CRITERIA → Enhancement of accessibility

General Aim → An improvement in the accessibility to the park can increase the number of visitors, reduce traffic and average travel times.

SUB-CRITERIA → Connection to the park

We are going to measure the number of daily buses going to the park. This is an important indicator since public transport is the main means of transport for tourists and for group activities (school trips,...).

UNIT OF MEASUREMENT

Number of buses per day

MEASUREMENT

The number of buses related to the baseline solution refers to the lines currently operating in the section that connects the center to the park, which are lines 7, 14 and 15 and are managed by the company "Bus Miccolis".

We then considered a 10% increase in the balance scenario consisting in an enhancement of the line 15 which at the moment is the one with the lowest frequencies.

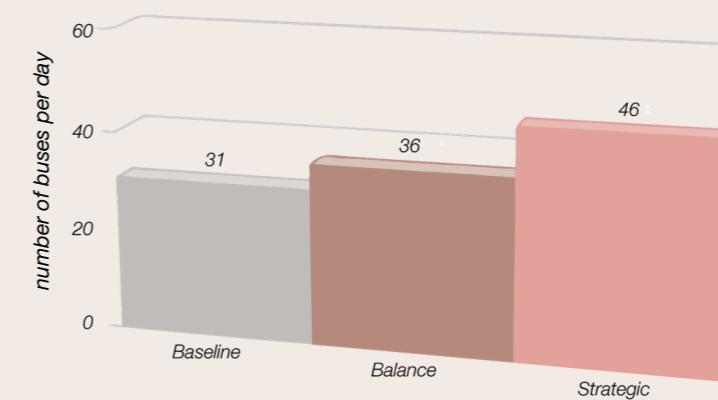
The strategic scenario, on the other hand, provides for the introduction of a new line operating exclusively on the link with the park and which makes use of small specialized buses for tourism and school trips. This line would complement those currently present, allowing better management of the flow of visitors to the park at peak times.

Baseline → 31

Balance → 36

Strategic → 46

Buses connecting the park with the city centre



Performance matrix

ENHANCEMENT OF ACCESSIBILITY	SUB-CRITERION	INDICATOR	PERFORMANCE SCORE		
			Baseline Scenario	Balance Scenario	Strategic Scenario
1. Connections to the park	Number of daily buses	31	36	46	
2. Accesses	Number of new entrances	10	11	13	
3. New trekking routes	Length of Routes (km)	65	70	100	

1 - There are already 3 bus lines (7,14,15). We considered a 10% increase in the balance scenario and a 50% increase in the strategic one;

2 - Nowadays, there are 10 points of access to the park. In the balance strategy we aim to create at least another entry in the northern part of the park, which is the critical one. Whereas in the strategic scenario there is an extra effort in order to facilitate the flux and to improve security;

3 - Nowadays there are 7 trekking routes which cover a 65km path. In the balance scenario the goal is to add an extra 5km long path; while in the strategic we want to propose three new routes with different difficulty levels: 5km,10km,20km;

Performance matrix

	SUB-CRITERION	INDICATOR	PERFORMANCE SCORE		
			Baseline Scenario	Balance Scenario	Strategic Scenario
PROMOTION OF TOURISM PROGRAM	4. Marketing Communication	Number of weekly events	0,6	0,8	1
	5. Tourism carrying capacity (Maximum Capacity)	Number of tourist manageable under different conditions	438	508	586
	6. Park attractiveness	Annual increment of visitors	13,39%	32,09%	52,41%

4 - From 2010 the number of events for week is around 0,6. We expect a slight increase in the case of the balance scenario and at least one event per week in the strategic case;

5 - Calculated based on the average number of tourists visiting the park every year, taking into account the increase in capacity managed because of the different infrastructural interventions;

6 - Based on the average number of annual tourists to the park (20K), the number of tourists to Matera (892.087) and their annual increase (13,39%), we can calculate the retention rate of tourists to the park and thus the annual increment of tourists to the park;

Performance matrix

SUSTAINABILITY OPTIMIZATION	SUB-CRITERION	INDICATOR	PERFORMANCE SCORE		
			Baseline Scenario	Balance Scenario	Strategic Scenario
	7. Biodiversity preservation	Biopotential and Territory Capacity (MCal/year)	3,90E+08	3,92E+08	3,92E+08
	8. Financial independence of the park	Revenues on Opex (%/year)	30%	37%	38%

7 - This indicator is calculated by making the product of the surface of the park and a special coefficient related to the type of land which is considered. The aim in the balance and the strategic scenario is to maintain the current value despite the number of tourists who may compromise it. Reference: Gobattoni, F.; Lauro, G.; Monaco, R.; Pelorosso, R. (2013). *Mathematical models in landscape ecology: stability analysis and numerical tests*. In: ACTA APPLICANDAE MATHEMATICAE, vol. 125, pp. 173-192. - ISSN 1572-9036

8 - The reason is shown in the table below:

Percentage of tourists to either Park/Event		
10€	Park ticket	90%
15€	Events ticket	10%

	Tourists to Events	Tourists to Park	Revenue Events	Revenue Park	Total Revenues	Opex	Revenues/Opex
Baseline	2278	20502	34170	205020	239190	797300	30%
Balance	2642	23776	39627	237764	277392	757435	37%
Strategic	3048	27434	45724	274343	320067	837165	38%

Performance matrix

SUSTAINABILITY OPTIMIZATION	SUB-CRITERION	INDICATOR	PERFORMANCE SCORE		
			Baseline Scenario	Balance Scenario	Strategic Scenario
	9. Social impact of inhabitants	Percentage of directly involved citizens in annual activities	0,15%	0,20%	0,30%
	10. Waste management	Percentage of recycled waste	Negligible	20%	50%

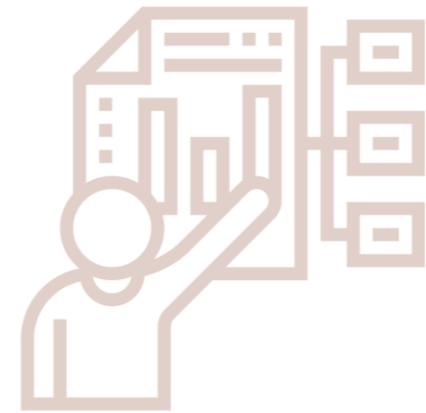
9 - The number of citizens involved in the activities of the park has been evaluated in the baseline scenario by looking for the current number of tourist guides and volunteers (Servizio Civile). We expect that in the balance scenario there could be an increase of about 30% of workers/volunteers. The increasing needs for maintenance of the park in the strategic scenario could lead to a doubling of people directly involved in the park activities

10 - Nowadays the problem related to the waste management within the park is not considered since the amount of waste is negligible. Nevertheless, there are some areas inside the park where there are unauthorized stacks of waste. Since we are providing a plan to increase the number of visitors, the problem of accumulation of waste might become relevant, so we propose their recycle in different percentages depending on the scenario.

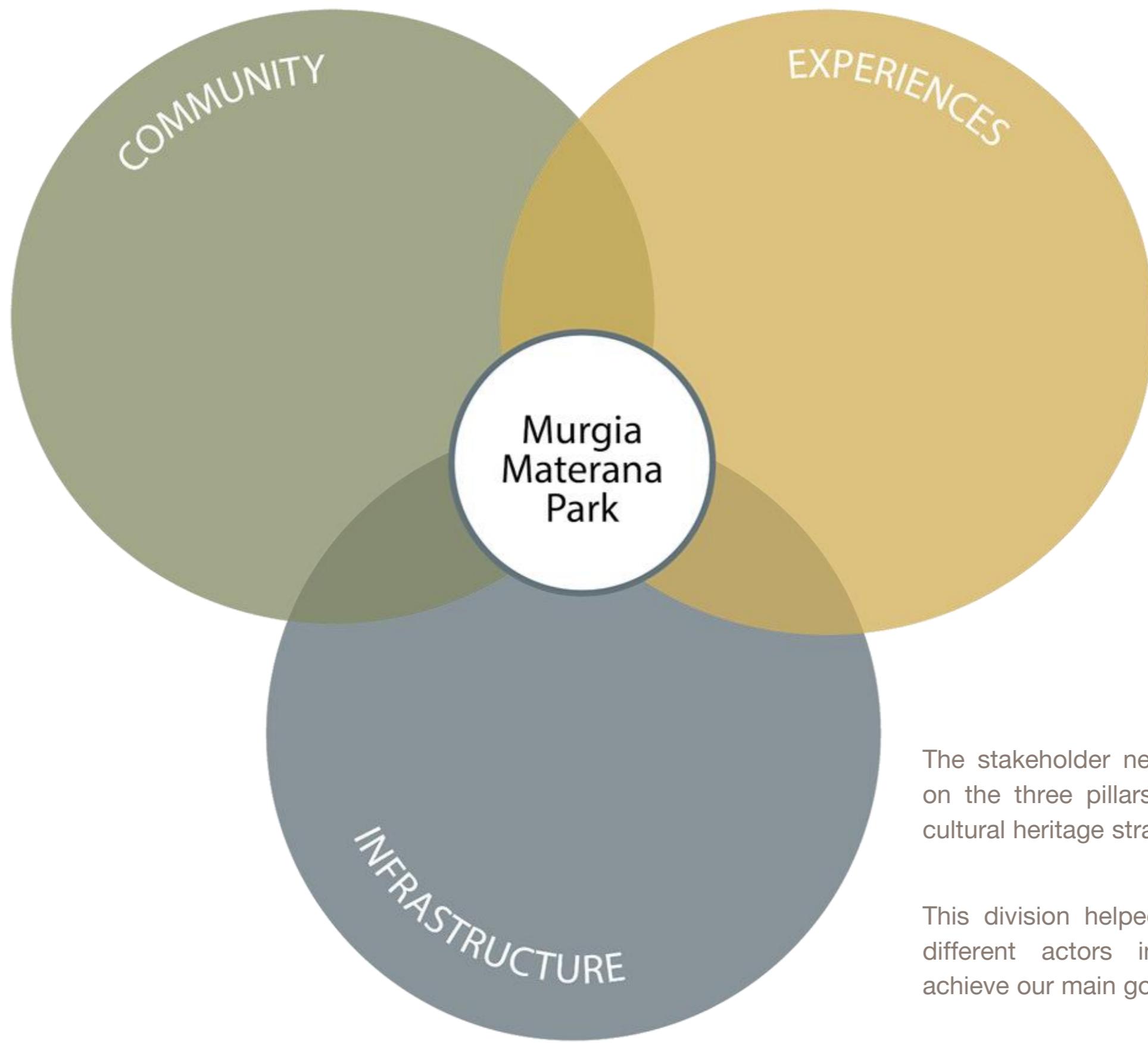
Considerations

Looking at the different alternatives, we can see that the Strategic solution is the dominant one on each aspect analyzed in the performance matrix, since the analysis has been carried out based on the key elements in the Letter of Engagement, which are the same upon which we have built the strategic scenario. However, it's important to point out that the Balance scenario ranges over a wider spectrum of actions, which are only partially represented through the Decision Tree. Despite the Strategic scenario seems to be the most promising one, we should also point out the relevant increase in Operating Costs (and Capital Expenditures) as a result of the implementation of the different actions. These costs are estimated to be optimally covered by an increase in revenues through additional tourists to the park. However, the response by tourists is an exogenous and thus uncontrollable factor which may compromise the expected financial sustainability.

In conclusion, we suggest to go for the Strategic Scenario because it tackles the most crucial elements and thus allows to optimize the final outcome with respect to the employed resources, also leading to a more sustainable financial structure in the long term, thanks to the involvement of the local community.



Network

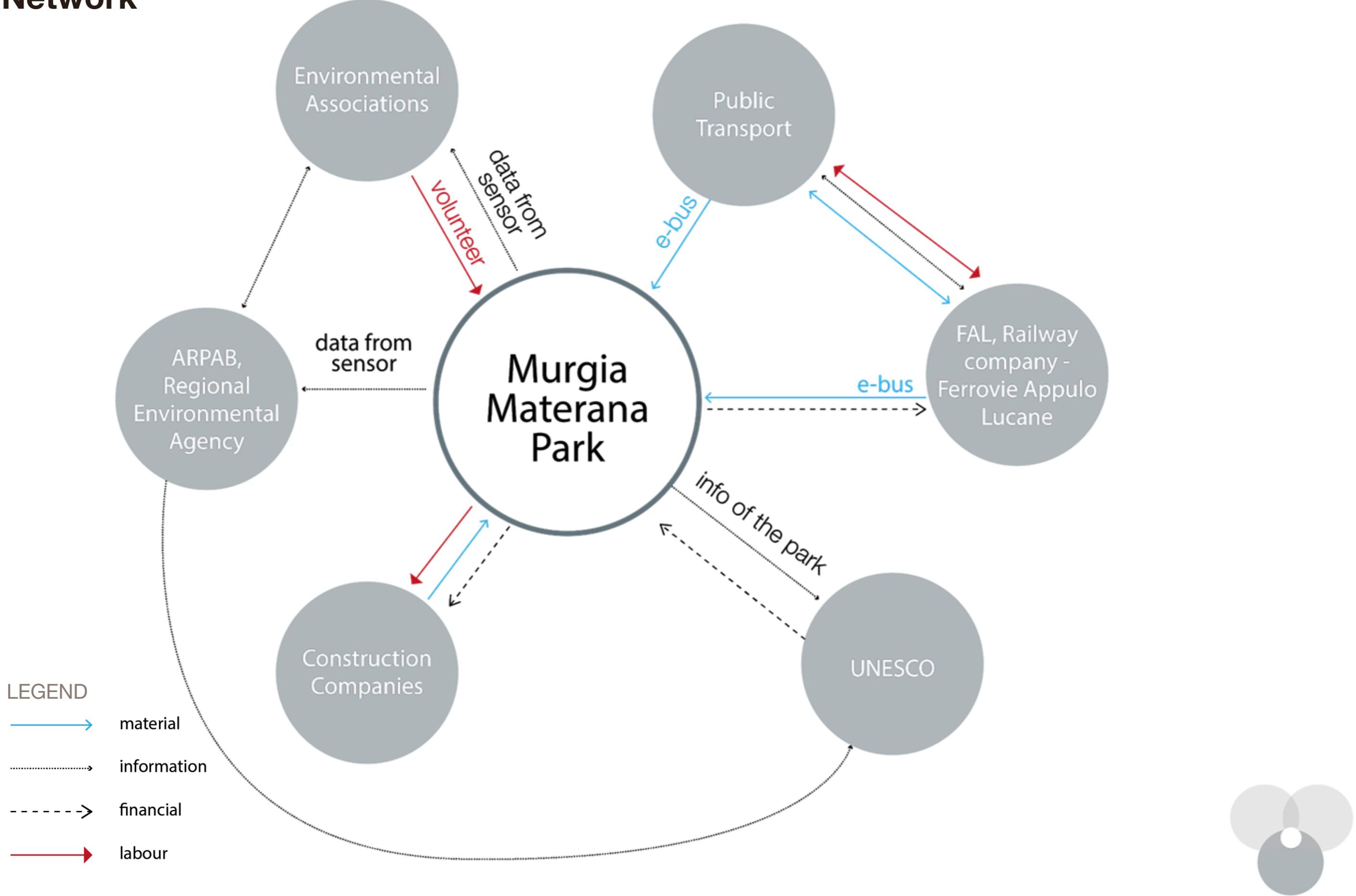


The stakeholder network was created based on the three pillars of the objectives of our cultural heritage strategy.

This division helped to understand how the different actors interact while aiming to achieve our main goals.

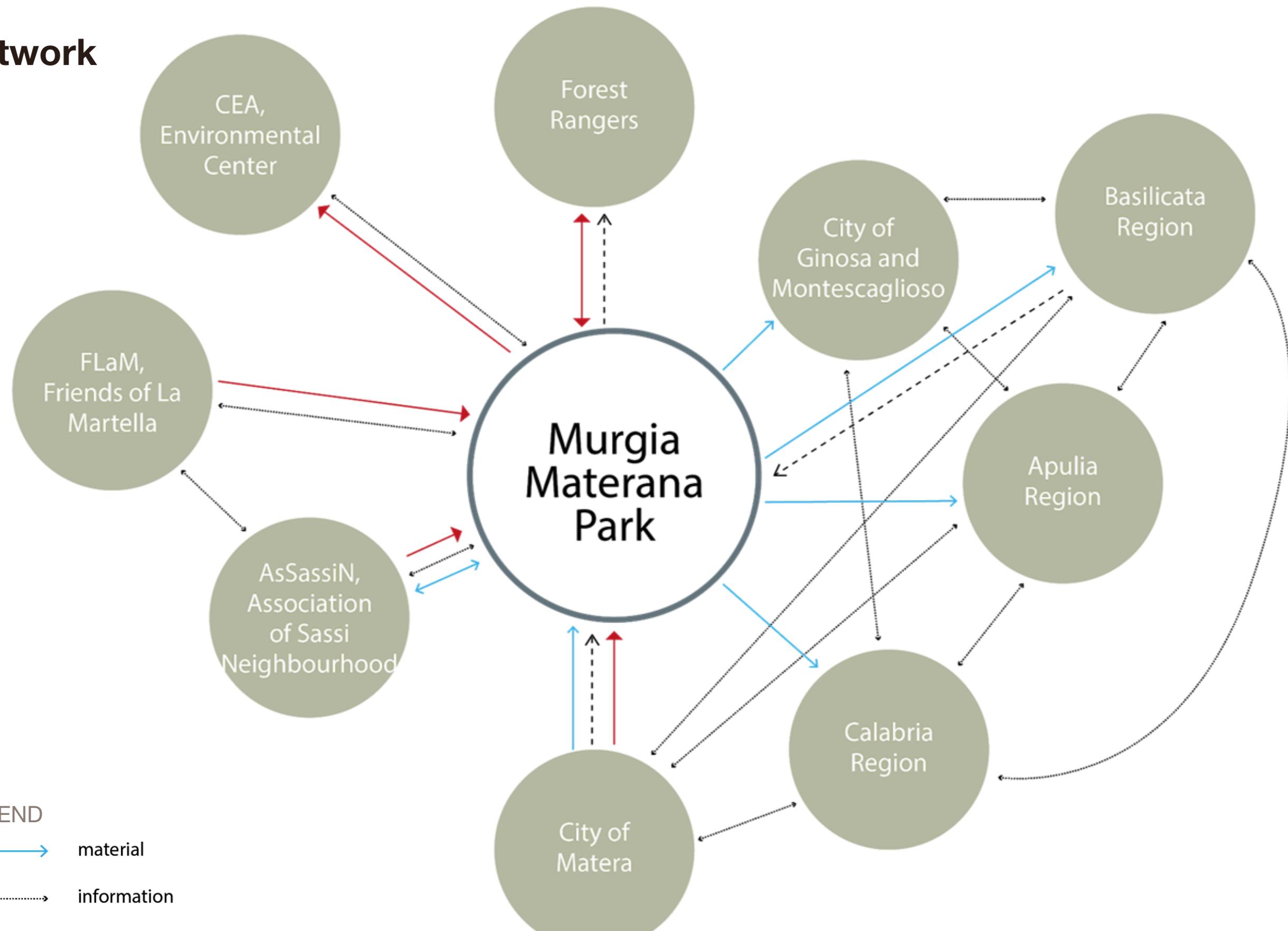
Network

Cultural Heritage Strategy | Murgia Materana Park

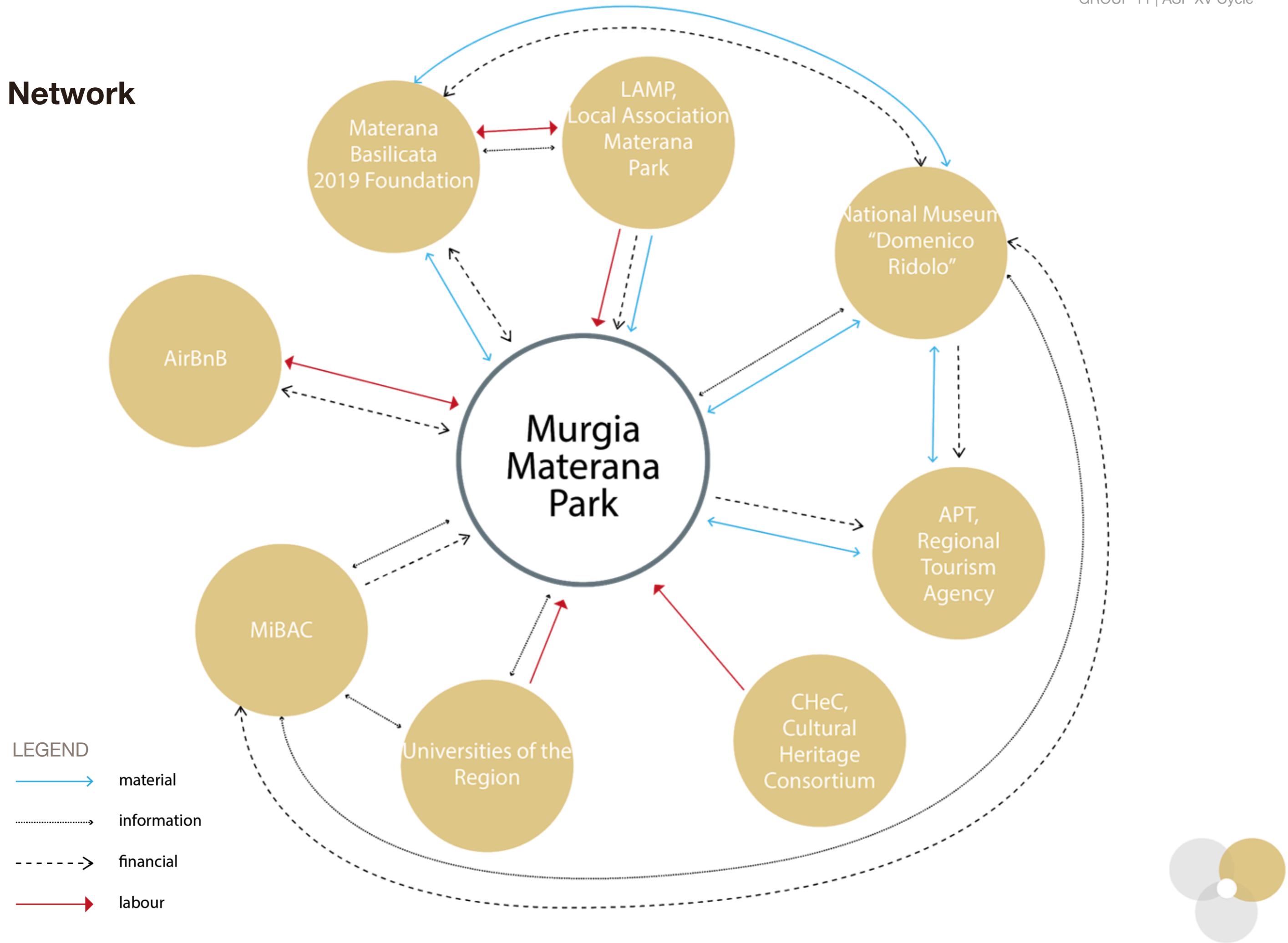


Network

Cultural Heritage Strategy | Murgia Materana Park



Network



Actions

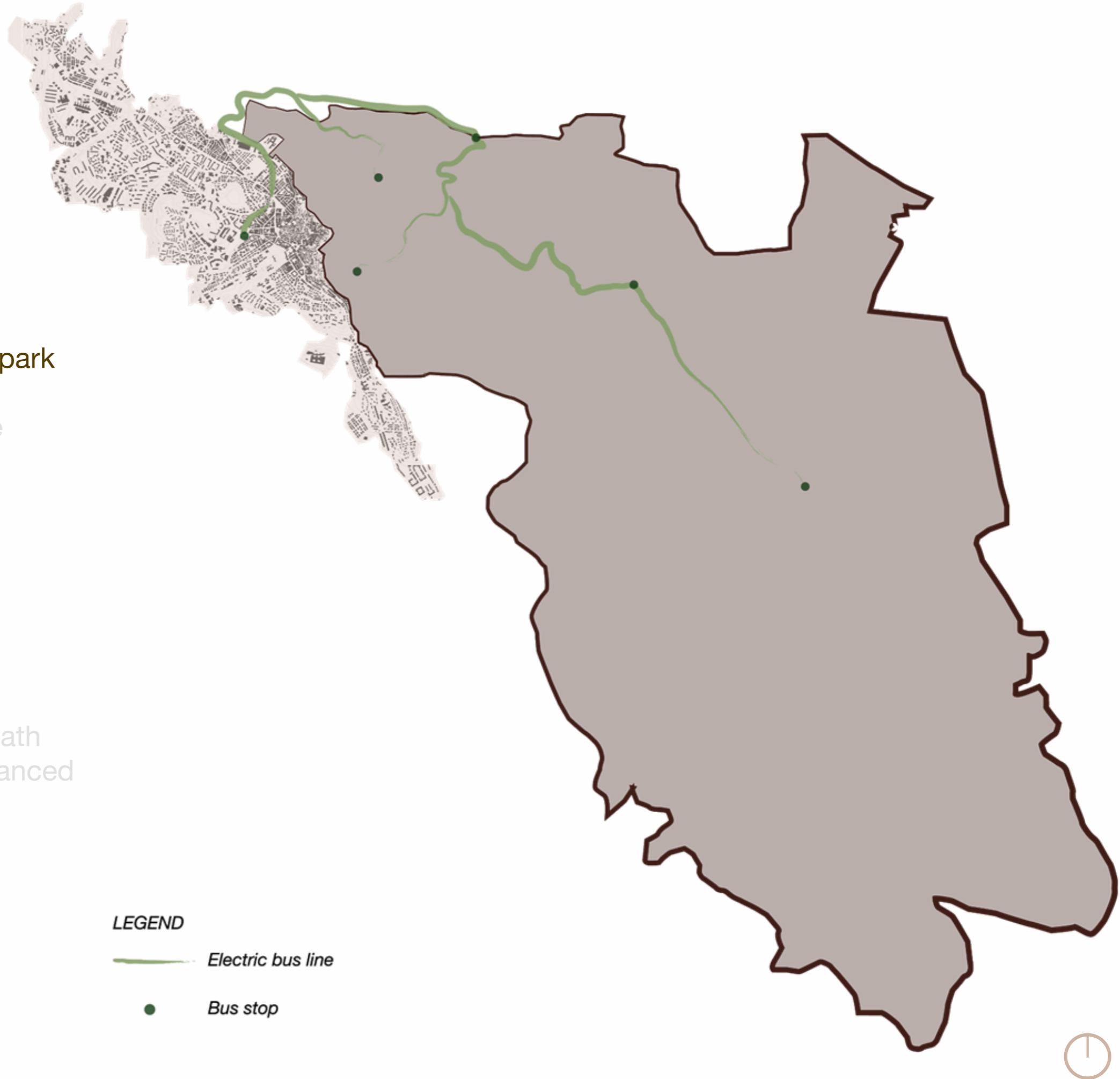
Introduction of sustainable transport to and inside the park

Accessibility through Ponte Tibetano della Gravina and Materana Refresh

Improvement of Belvedere Murgia Timone

Tech Totems

Smart signage to provide path signaling, collect data, enhanced experience



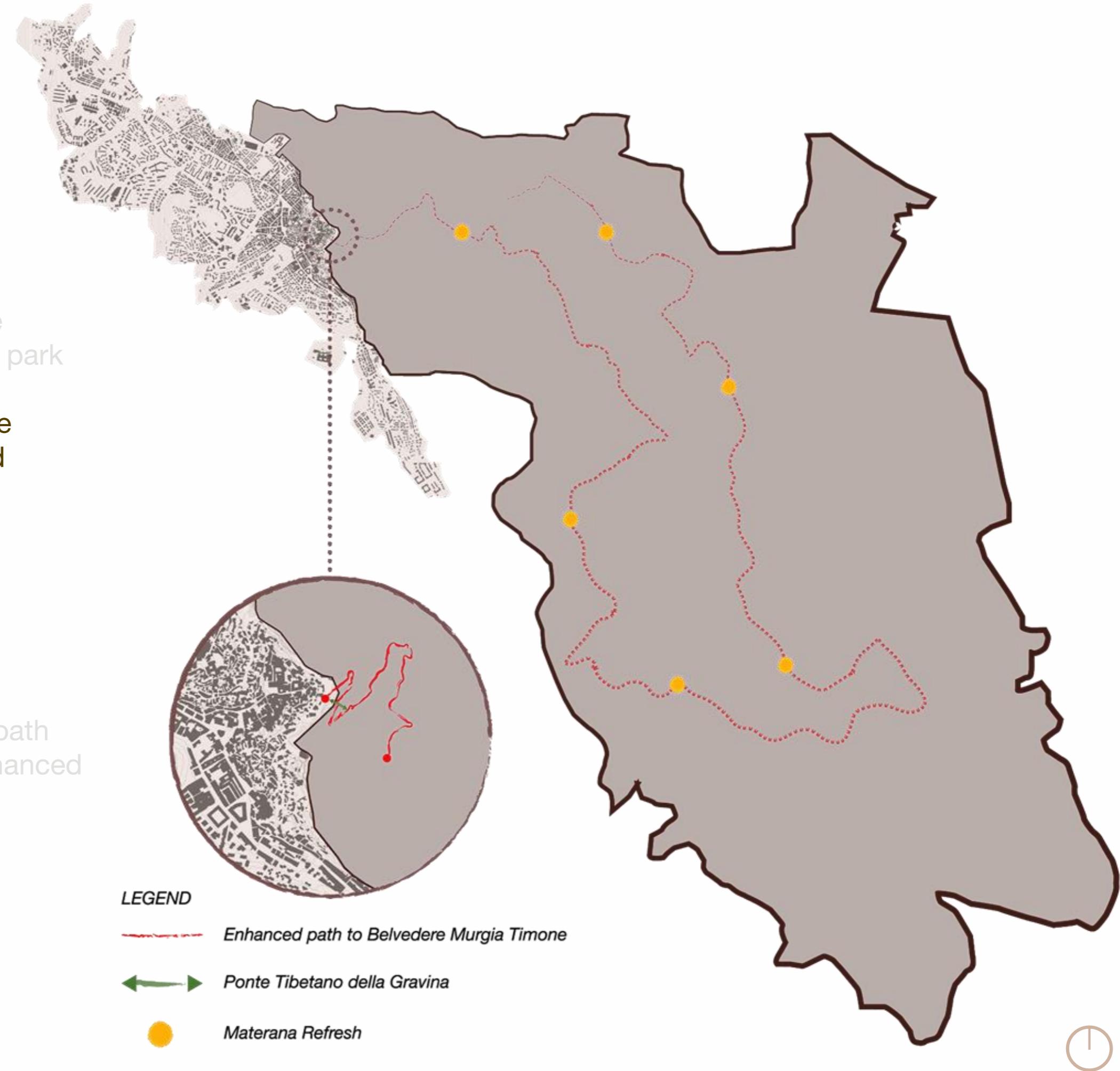
Introduction of sustainable transport to and inside the park

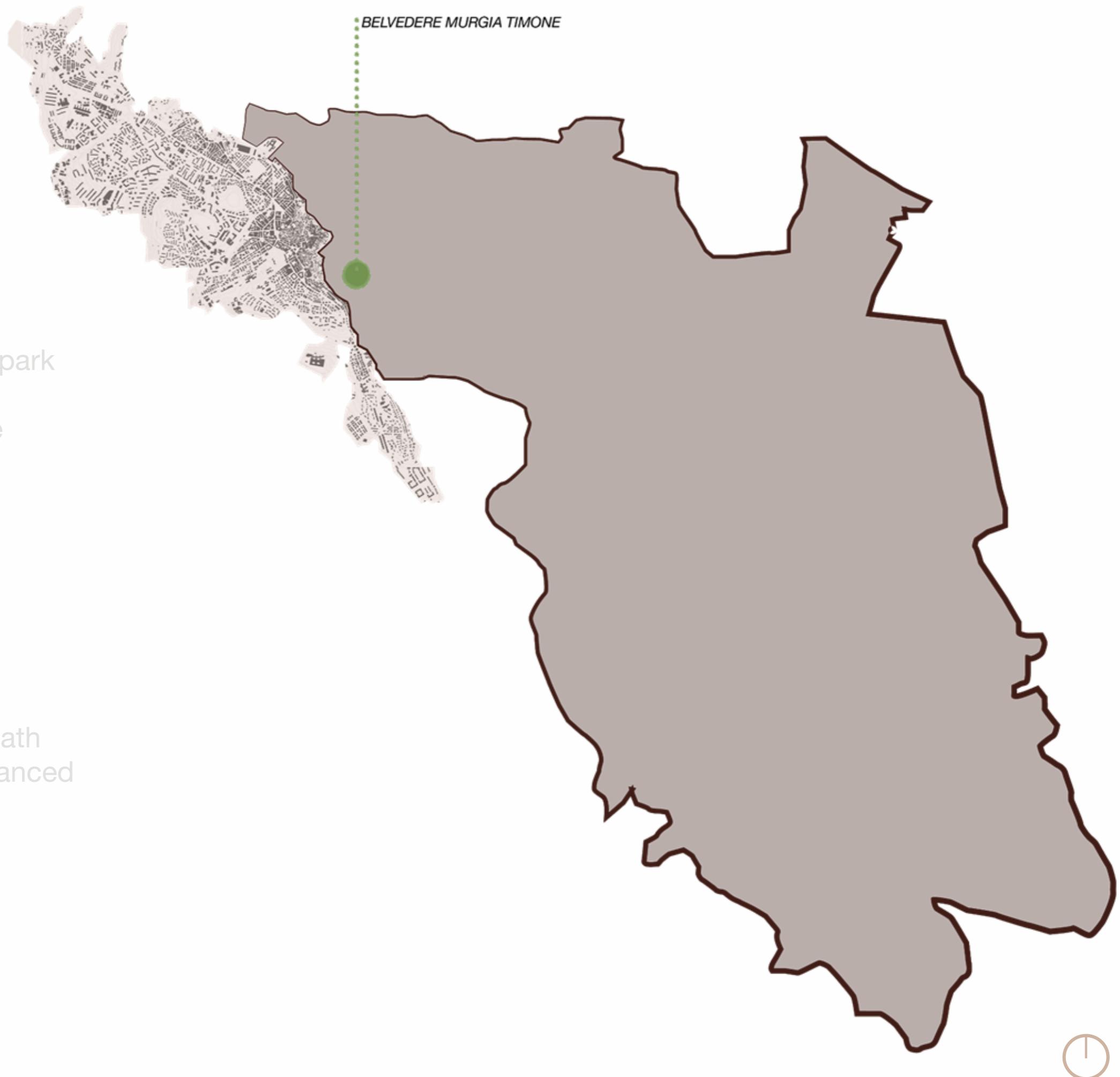
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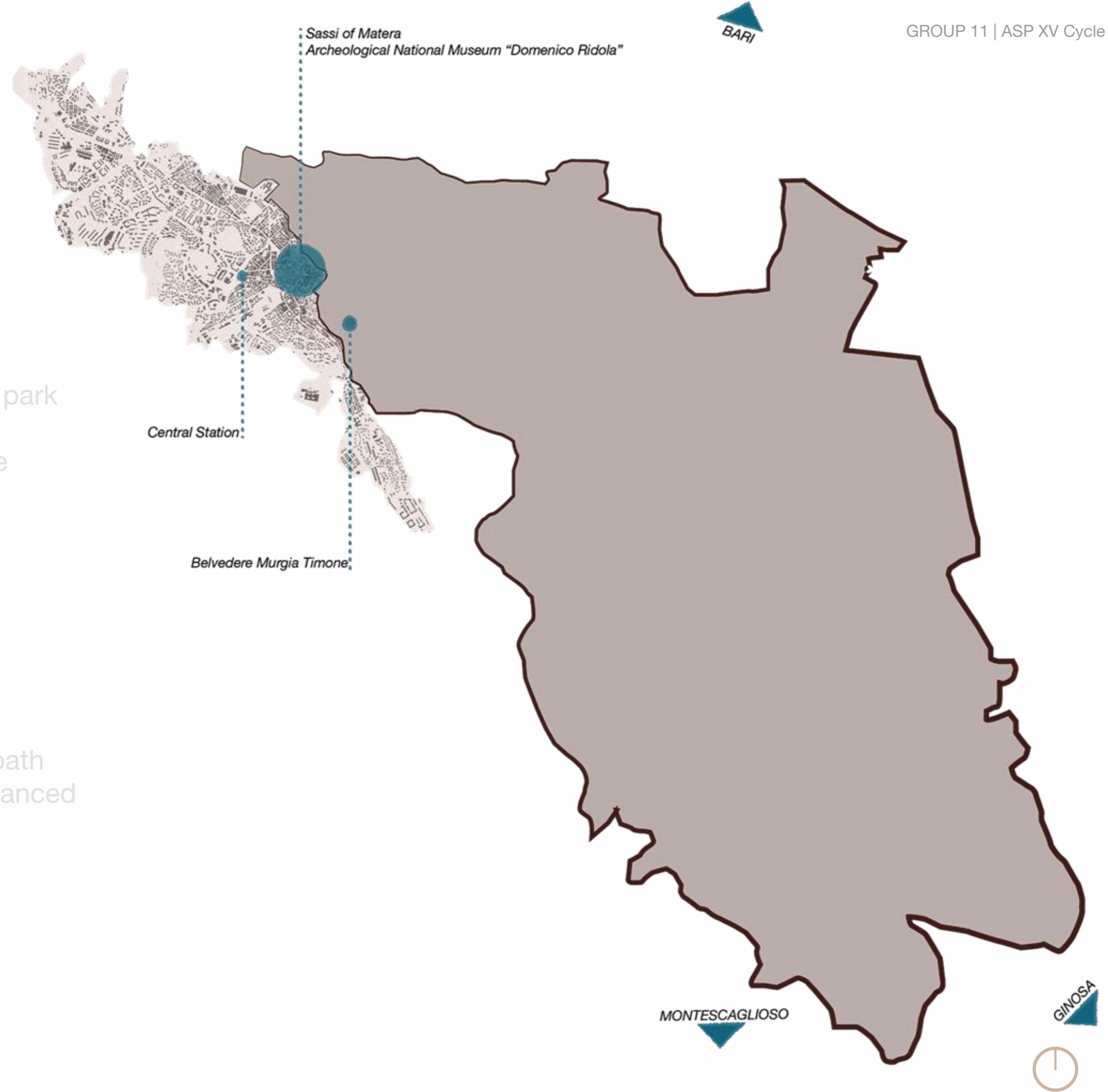
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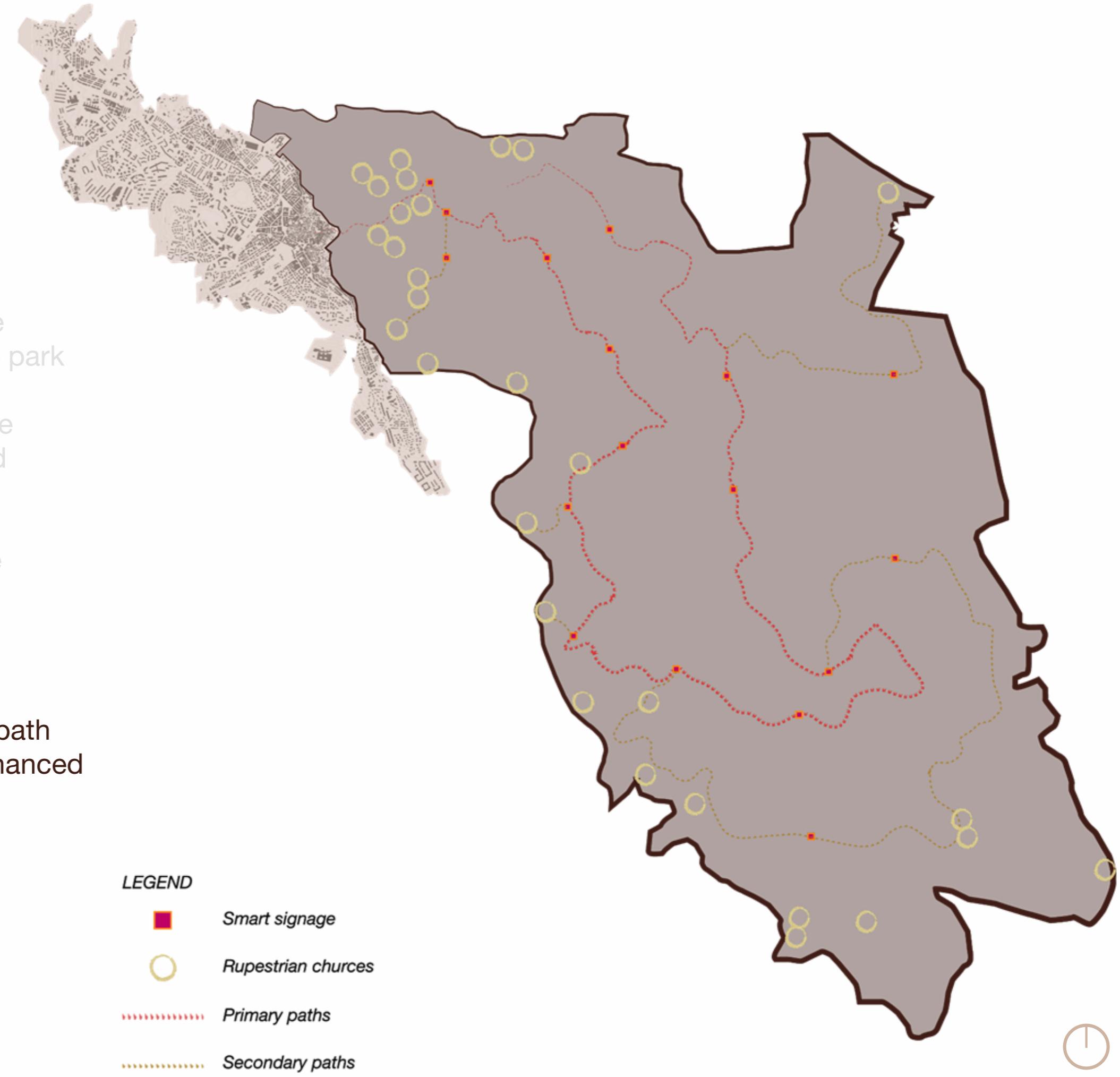
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5 - MULTICRITERIA EVALUATION

Level of Conflict/Coalition

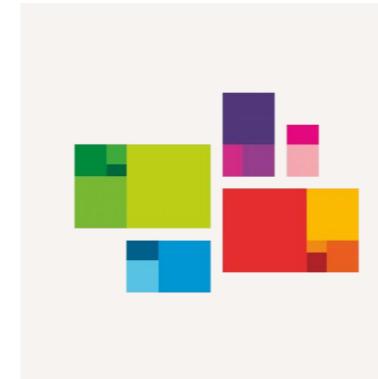


CITY OF MATERA



Indifference

The role of the City of Matera can be considered of secondary importance in developing our client's activities. The idea is to install several *totems* in specific places whose main objective is to inform people and tourists about the presence of the Park and advertise the related initiatives. This implies that the municipality of Matera should give the authorization to install these totems in the urban territory. The current situation shows no issues relating to the attainment of this permission.



MATERA-BASILICATA 2019 FOUNDATION



Coalition

Matera-Basilicata 2019 Foundation does not seem to have particular issues in relation to the Park. The relationship which involves both the actors is the organization of events within the territory of the Park, financed by Matera-Basilicata 2019 Foundation. A variable percentage of the incomes of the events, depending on the kind of event, is destined to our client.

Level of Conflict/Coalition



ATP, AGENCY FOR
TERRITORIAL PROMOTION

Coalition

The agreement with the ATP is expressed by a fruitful collaboration with the aim of the installation of the *totems* placed around the cities and in strategic places such as the railway stations of Matera or Bari's airport (to be agreed with Apulia region).



ARPA, REGIONAL
ENVIRONMENT AGENCY

Coalition

We have found many common interests with this actor. One is the waste management, ARPA agrees with the recycling plan inside the park. They also exploit the data coming from our sensors distributed throughout the park to monitor the environment. The collaboration is based on the exchange of the cognitive resources of ARPA and our client.

Level of Conflict/Coalition



SUPERINTENDENCY FOR
CULTURAL HERITAGE MiBAC

Indifference

The reason why this stakeholder's relationship has been considered indifferent is that MiBAC activities are more focused on the preservation of the city's Cultural Heritage instead of the territory around it. Since the park is part of UNESCO we are not going to implement any building activity that goes against the Superintendency's rules.



MH, MATERA HOTEL OF THE
HILTON HOTEL GROUP

Medium Level of Conflict

The hotel would like to pay for the building of the Materana Refresh tiny houses and they'd like the tourists to sleep in the park paying for these rooms. However, this goes against our concept of the Materana Refresh, tourist experience, and the regulation of the UNESCO site. Therefore, we're in conflict with them.

Level of Conflict/Coalition



FAL, FERROVIE APPULO
LUCANE, RAILWAY
COMPANY

Coalition

We can establish a collaboration with the local Railway company to provide electric buses to move tourists that aren't able or willing to walk into the park. Further explanations are provided in the following section.



AsSassiN, ASSOCIATION OF
SASSI NEIGHBOURHOOD

Coalition

We can establish a coalition to relieve the district from intensive touristification and help us lead more tourists to the park. Our strategy would be stabilizing the pedestrian bridge linking Sassi to the park and build few small totems to advertise the park. In exchange, the district would provide us volunteers to help in the park. Furthermore we will collaborate with AsSassiN to develop a common App that allows to follow the interactive paths inside the park.

Level of Conflict/Coalition



CHeC, CULTURAL HERITAGE
CONSORTIUM

Indifference

Their activities are focused on the management of specific cultural heritage bodies and they don't touch directly our interests. A conflict is not present because they operate in parallel with us in the promotion of cultural heritage but a collaboration has not been established because the objectives of preservation are different..



FLaM, FRIENDS OF LA
MARTELLA

Coalition

We can establish a coalition to promote the district with 'La Martella Route', close to the western park's area and Christ's Crypt, in our signage system, in exchange for volunteers from La Martella to help in the park.

Level of Conflict/Coalition



AirBnB

Coalition

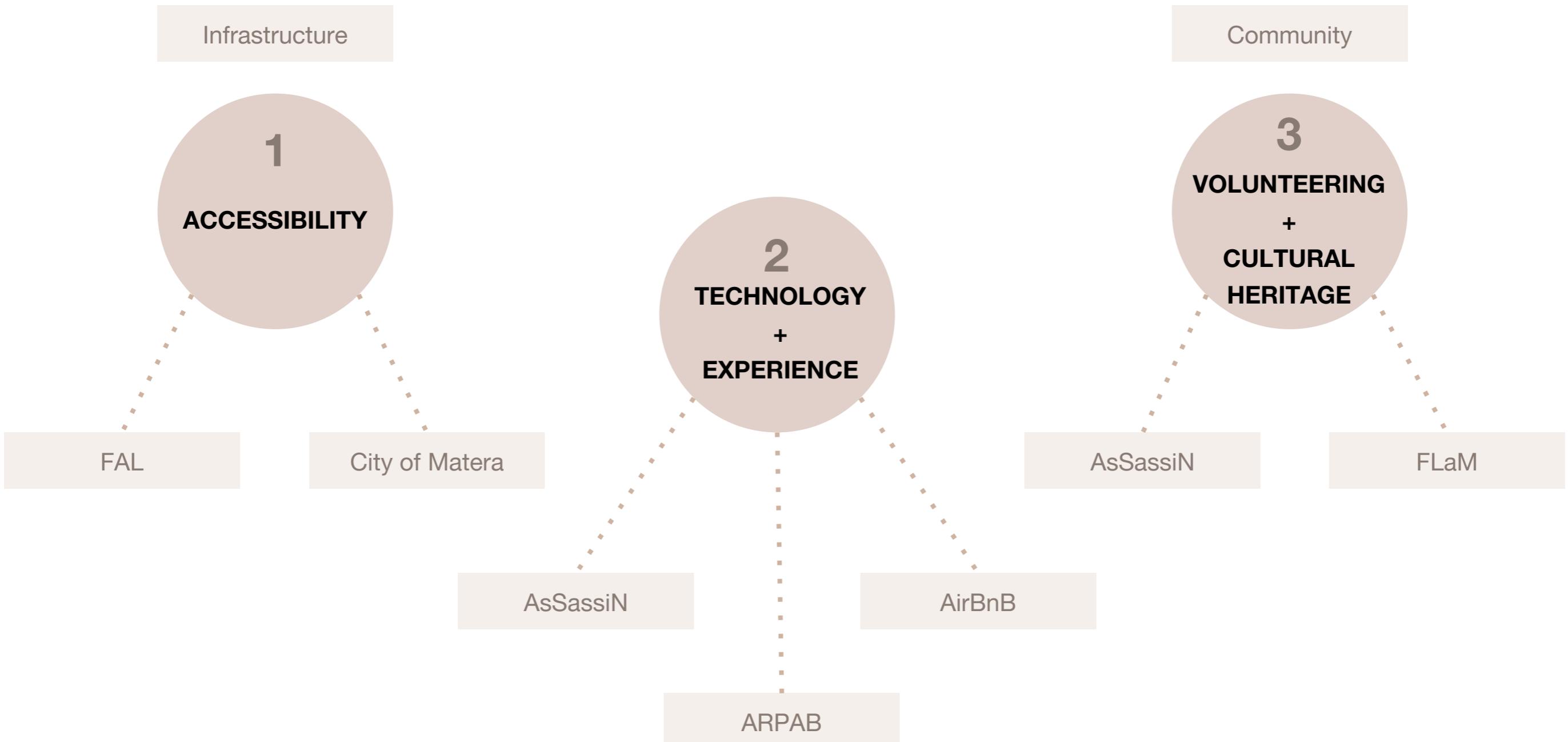
We can establish a coalition with AirBnB to use it as a platform to sell the experience in the park.

The collaboration has also the objective to create a project called “Wonder Matera” that plans to manage some volunteers on the maintenance and the renovation of the park.

Considerations

We have identified a set of clients that should be much more involved in our final strategy, they are the stakeholders with which we have established stronger coalitions: FAL, AsSassiN, FLaM, ARPA and AirBnB. Obviously we have considered MH with which a medium level of conflict is present since its position is about the construction of small structures inside the park that cannot be accepted due to the legislation about the modifications of natural parks imposed by UNESCO.

Strategy definition



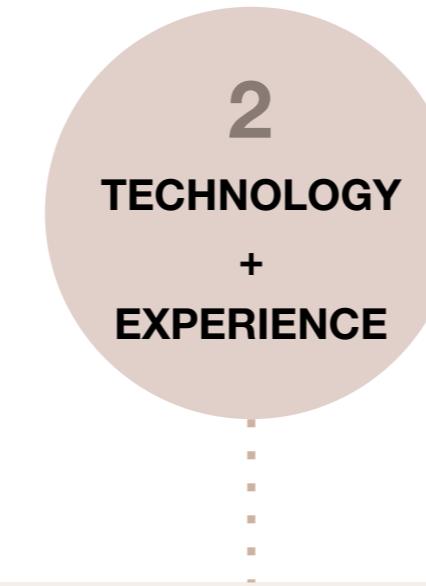
Strategy definition



Reached through cooperation with *FAL*, which will provide the electric buses, with the approval and legal support of the *City* of *Matera*.

We allow *FAL* to gain **Economic Resources** from the sale of tickets to visitors traveling into the park, in exchange for **Legal Resources** from the *City of Matera*, and **Cognitive Resources** from *FAL*.

Strategy definition



Technology is developed through the implementation of an app for tourists developed in collaboration with AsSassiN to provide an exclusive experience while walking through the park. Information is shown on visitors' devices when they walk by signaling devices equipped with Bluetooth. This technology allows visitors to be localized inside the park giving them the possibility of receiving personalized path suggestions and indications.

We provide **Economic Resources** in the form of tourism promotion and job growth as a result of it, in exchange for **Economic Resources** in terms of volunteering by people of the Sassi neighbourhood represented by AsSassiN, described in the third pillar of our strategy. As for Experience, we will use *AirBnB's* platform to sell the experience in the park and benefit from their "Wonder Matera" project in exchange for advertising on our tech totems.

We provide AirBnB with **Political Resources** by means of local support to the company through brand marketing on the totems in exchange for **Economic Resources** from the sale of the experiences on the platform and the Wonder Matera project.

Moreover a few smart signage devices will be equipped with several sensors (e.g. fine dust, air quality) and placed in strategic points. These will be useful to monitor the environmental conditions and exchange data with ARPAB. The data collected by the sensors will be stored by the devices and pushed to users when they are in the area of reach of the Bluetooth. The app installed on the users' smartphone will automatically send the data to the server when they will connect to the Internet, outside the park.

We expect that the ARPA can elaborate the data and consequently realize a constant-updated model aimed to keep under control the ecosystem's conditions of the park. We provide **Cognitive Resources** through data in exchange for **Legal Resources** in the form of support for our renovation projects and **Cognitive Resources** as know-how for waste management.

Strategy definition



The rise in the number of visitors will lead to an increase in needs, that ultimately will cause a major request for people involved in the park activities, both workers and volunteers. The idea is to collaborate with AsSassiN in order to increase the number of volunteers. From the point of view of AsSassiN, the increase in the number of visitors in the park could mean a reduction in the number of tourists in the *Sassi* neighbourhood. Locals are currently experiencing difficulties because of the excessive number of tourists.

The same goal is pursued also with another association, FLaM - Friends of La Martella, which has the intention of providing volunteers in exchange of a greater visibility, achieved by adding the experience information and the name of the association on the tech totems installed. We provide them with **Cognitive Resources** through major visibility and data and we receive **Economic Resources** in the form of labour that does not require a salary and **Cognitive Resources** by means of the knowledge and experience of the members of the association.

Dealing with conflict



As for our strategy in dealing with *Matera Hotel*, with which we have a medium level of conflict, we have decided to go ahead with our own strategy and not to allow the hotel to build and manage the Materana Refresh for profit (**Being in Contrast** approach). We may have the Materana Refresh designed and built by a start-up and develop them as a place where people can relax and use a bathroom. The operating cost for the use of the facility is included in the Park's ticket. We will provide these small houses with biological toilets being the least impacting solution, since the Park lacks a sewer system and have them managed by the forest rangers. The building of such facilities will be done after observing the tourist flows over a 5 years' period, to assess the financial feasibility and sustainability of the project.

6 - CONCLUSION

Conclusions

To sum up, the rationale behind our choices has been extensively explained in the description of our strategy, where we have identified the opportunity to collaborate with the majority of the stakeholders being in conflict with only one of them.

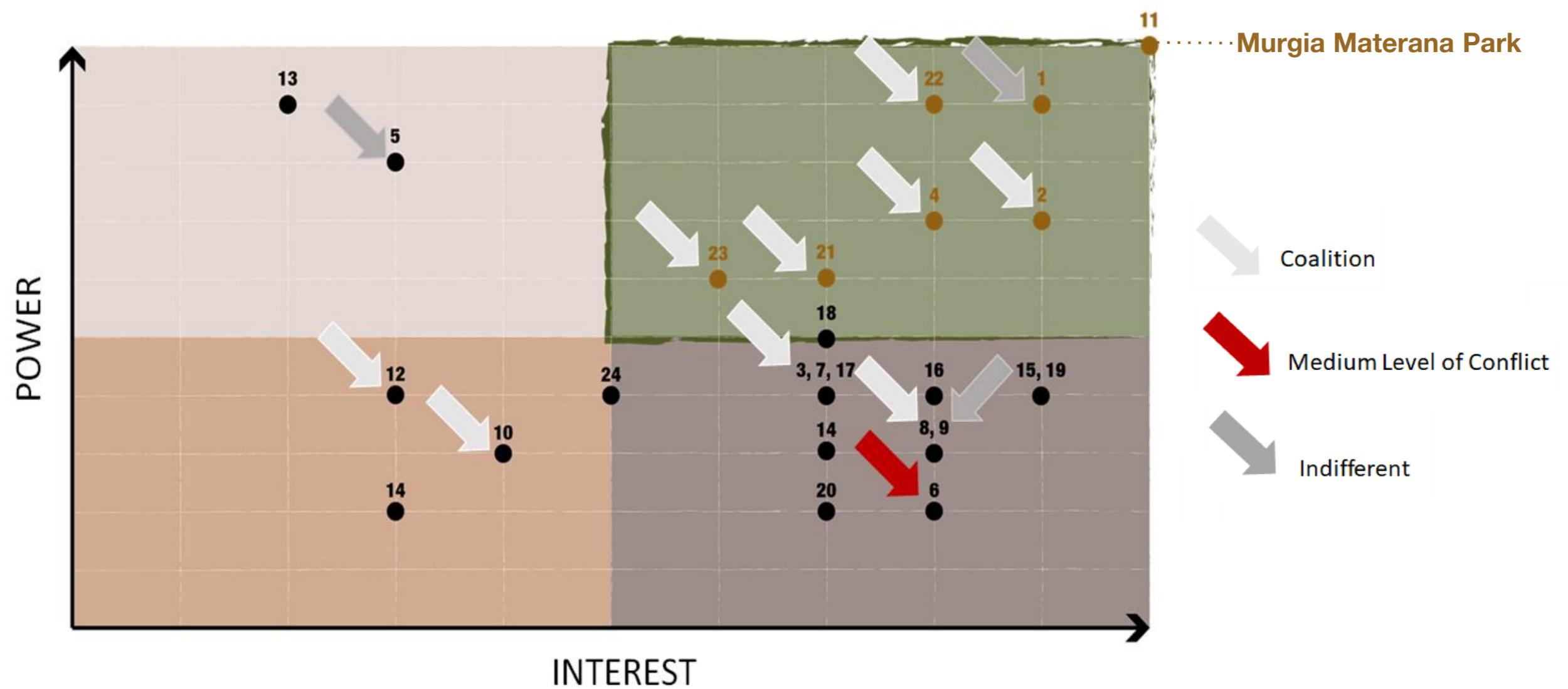
The pros of our strategy lie in the strong collaborations we have established with some clients giving us the possibility to reach our goals and at the same time meet the needs of other players. Moreover, the possibility of sharing resources are crucial for our objectives, like economic and cognitive ones. The visibility of the park strongly increases because of these coalitions, reaching levels that we would have never been able to achieve with our own resources.

The only drawback of our strategy is the absence of effective collaborations with some stakeholders. On the other hand, the stakeholders satisfied are represented by FAL, AsSassiN, FLaM, the City of Matera, Matera-Basilicata 2019 Foundation, ARPA and AirBnB, while the only one we didn't satisfy is MH - Matera Hotel. However, we consider this scenario as the most preferable, since the satisfaction of MH would bring us to a conflict with the Superintendency for Cultural Heritage, ARPA and UNESCO, the gatekeeper stakeholders that can effectively block our plan.

The strategic scenario is the one we suggest. Indeed, our strategy matches the actions of the strategic scenario with the added value of the collaboration with other actors ultimately leading to great value for society.

Why our strategic scenario is the best?

Because we can establish strong coalitions with most of the 12 main stakeholders involved and the other key players we have identified previously (in particular Regione Basilicata and Regione Puglia), thus showing how flexible our strategy is:



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