

## Authors:

Christoph ZEPF (IPLEIRIA), [chris.zepf@web.de](mailto:chris.zepf@web.de)

Krzysztof ZAJĄC (ULODZ), [krzysztof.zajac@edu.uni.lodz.pl](mailto:krzysztof.zajac@edu.uni.lodz.pl)

Baharan MONTAZERI (POLITO), [s289107.studenti.polito.it](mailto:s289107.studenti.polito.it)

Yusuf Çağrı TÜRKSEVEN (UMERSIN), [turksevecagri@mersin.edu.tr](mailto:turksevecagri@mersin.edu.tr)

# Wine, Food and Cycling: Vineyard Landscape of Piedmont

## Case Study Analysis and Policy Recommendations

### Abstract

This report was created during a study visit under Erasmus+ SPOT Sustainable Spatial Planning of Tourism Destinations Project in Italy's Piedmont region. It has been observed that even though this region has very attractive vineyard areas, it has problems with mobility and accessibility. Therefore, this report focuses on defining solutions for the identified issues in the vineyard region. After a study visit to the vineyard destination and having a conference with the stakeholders, some ideas and suggestions were developed in order to improve those issues in the Vineyard Landscape of Piedmont: Langhe-Roero and Monferrato (LRM).

The report starts with the analysis of the case study in Vineyard Landscape of Piedmont: Langhe-Roero and Monferrato which includes the site visit in the area and meeting with some of the stakeholders. It is followed by the stakeholder analysis to understand the qualities of the actors involved in the process. After that, a literature review has been done for deepening the knowledge regarding the area. Moreover, a stakeholder and SWOT analysis were conducted to determine all the actors and conditions affecting the situation in the Landscape. The results of the analysis were put together in a form of policy recommendations for building multimodal hubs around the landscape which would allow visitors to switch from a car to a bike or a bus. The purpose of the hubs would also be to collect toll from visitors who would still like to use a car for traveling around the landscape.

Keywords: Langhe-Roero and Monferrato, Tourism, Mobility, Spatial Planning, Policy Recommendations, Sustainability

## Theoretical and methodological framework

### Aim of the report

The main aim of this study is to identify issues inside the case study area and give suggestions and solutions in order to improve the Vineyard Landscape of Piedmont: Langhe-Roero and Monferrato area's accessibility by suggesting some other alternative transportation options such as Hydrogen buses, rental bikes or car sharing, and electric scooter sharing systems. To do so, it is suggested that building some parking spots around the area to avoid traffic jams and make more sustainable tourist destinations.

### Literature review

There is growing interest in sustainability and sustainable transportation around the whole world. Because transportation activities have significant sustainability impacts (Litman & Burman, 2006). When literature is examined, there are very comprehensive studies that determine indicators related to sustainable transportation (Litman, 2006; 2007; Jeon et al., 2013). In these studies, sustainable indicators have been grouped as traditional indicators, basic indicators, and comprehensive indicators. Traditional indicators; These are criteria related to traffic conditions such as service quality, average traffic flow rate, parking facilities, and prices. As the main indicators; Factors such as fossil fuel use, traffic accident injuries and deaths, and land use are indicated.

From the perspective of tourism, transportation advancement plays a crucial role in its development and sustainability worldwide. Transportation and travel can be discussed without taking tourism into consideration, however, there will be no tourism without transportation. Therefore, transportation is an integral part of the whole tourism industry. Sorupia (2005) emphasized that in biodiversity-rich areas, the opening of sensitive and fragile areas through improved infrastructure and service may prove detrimental to the ecology of the place. In the light of such issues it is important to re-think the role of transportation in areas such as these. Page and Lumsdon (2004) contend that the transportation system of a tourist destination has an impact on the tourism experience, which explains how people travel and why they choose different forms of the holidays, destinations, and transport. Access to tourist sites varies according to the nature of the site, the state of infrastructure, and the efficiency of the public transport system. An increase in visitor numbers means a lot of things: congestion on the roads and trails, an increase in pollution level (both noise and air), more trash to contend with, insufficient infrastructure to support the increase, as well as the impacts on the environment and wildlife.

The literature illustrates how case studies are used in terms of sustainable transportation and sustainable issues. Gil, Caldo and Bentz (2011) studied sustainable mobility plans for the first time in Portugal. The stakeholders were also involved in the development process of a sustainable transportation plan. In another case study, Cavallaro et al. (2019) designed a tool to assist in transportation decision-making in the touristic coastal area. In order to do that, they identified five categories as territorial context, tourist city, tourist profile, transport system, and tourist mobility. Baptista et al., (2014) conducted a case study in Lisbon on car sharing systems as a sustainable transportation method. They found out that the car-sharing systems reduced energy use by 47% and carbon emissions by 65%. There is another study conducted in New Zealand that emphasizes the importance of stakeholder analysis in terms of developing transportation systems (Elias, Cavana & Jackson, 2004).

## Methods

The study has been designed as a case study. The main reason for using the case study approach and various case study analysis is that it becomes a fruitful method when there is a specific problem which requires deeper and better understanding. Therefore, the case study methods used by many other disciplines such as psychology, history, medicine, social work, and sociology (Gerring, 2007). Moreover, using a case study approach gives great advantages to the scientists. According to Yin (2018), using the case study approach allows collecting more information and data on rare cases. Using the case study method also allows researchers to develop hypotheses that can be explored in experimental research. On the other hand, the case study method has disadvantages or weaknesses as well. It is because they are hard to generalize to the larger population. Since the report is focused on finding solutions on sustainable transportation, mobility and accessibility alternatives, the case study approach was used.

Other analysis methods were conducted in the case study as the following: stakeholder analysis and SWOT analysis. Then the policy recommendations were given according to the data which was analysed. Policy recommendation is to inform people who are faced with policy choices on particular issues about how research and evidence can help them make the best decisions. A SWOT analysis organizes strengths, weaknesses, opportunities, and threats into a structured list. It is usually presented in a simple matrix form (Tambe, 2015). Stakeholder analysis aims to evaluate and understand stakeholders from the perspective of an organization, or to determine their relevance to a Project or a policy. Basically, stakeholders are a group of people or organizations that are affected by the Project. (Linderberg & Crosby, 1981; Brugha et al., 2000; Luyet et al., 2012). In this report, the areas' stakeholders are determined.

## Case study analysis

### Case study area

Vineyard Landscape of Piedmont: Langhe-Roero and Monferrato is the official name of a UNESCO World Heritage Site comprising five distinct wine-growing areas with outstanding landscapes plus the Castle of Grinzane Cavour in the region of Piedmont, Italy.

The local/global dynamics, i.e. the tensions, which have arisen in the development of local areas especially since the 1990s, faced on the one hand, with the processes of demographic aging and economic outsourcing and, on the other, with the competitive challenges posed from the internationalization of the economy. These have exacerbated pre-existing access difficulties and fuelled new demand for services for the population and for businesses. In certain areas, tensions have given impetus to local pathways of endogenous development; in others they have fuelled specific phenomena of selective (re)centralization of activities (gentrification in historic centres, commercial settlements near infrastructural nodes).

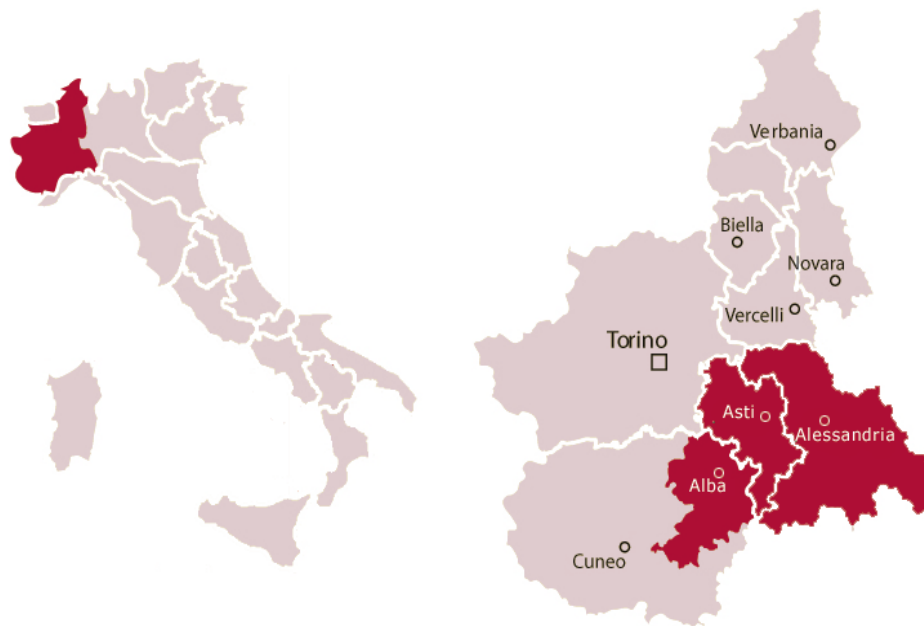


Figure 1: Administrative context of the case study area.

Source: own elaboration.

The Piedmont road network consists of:

- 9 motorways (about 800 km),
- state roads (about 700 km managed by Anas),
- provincial roads (about 18,818 km).

The motorways are managed, under concession, by companies that have the task of maintaining the full functionality of the infrastructures through periodic maintenance:

- Torino-Bardonecchia (Sitaf),
- Torino-Savona (Autostrada dei Fiori - ASTM Group),
- Asti-Cuneo (Asti-Cuneo Spa - ASTM Group),
- Torino-Piacenza; Turin-Milan (Satap - ASTM Group),
- Torino, Torino-Aosta and Torino-Pinerolo ring road (Ativa - ASTM Group),
- Genoa Voltri-Gravellona Toce (Highways for Italy).

The main identified problems of mobility and accessibility related to tourism in the Vineyard Landscape of Piedmont: Langhe-Roero and Monferrato are that there are no modes of transport that are an alternative to the usage of passenger cars. At the same time, the road network is not suitable for the high amounts of tourists that visit the area. The combination of those two issues results in traffic jams and clogging sides of the roads with parked cars, which negatively impact both the experience of the tourists and the quality of life of residents of the area.

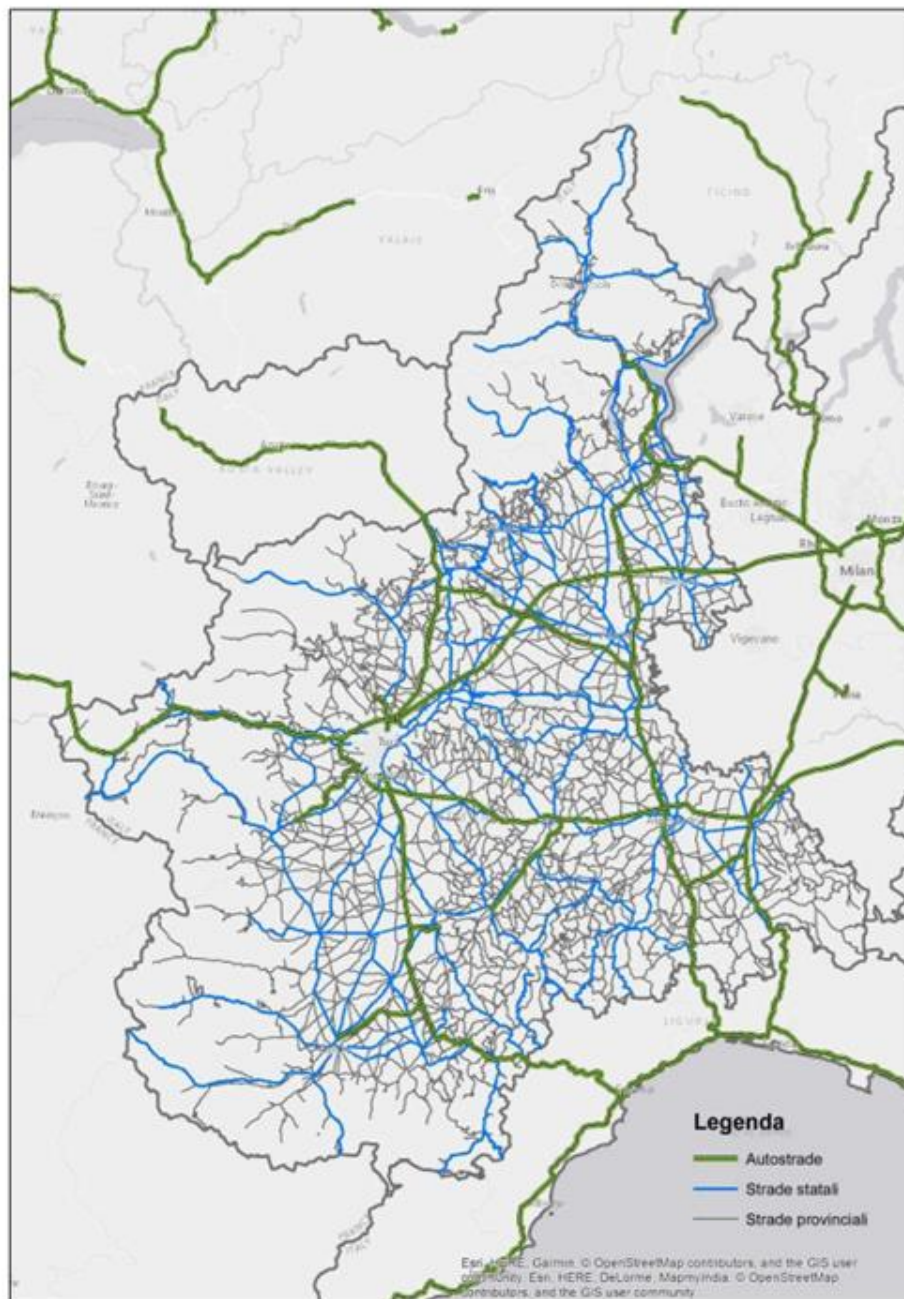


Figure 2: Highways, state roads, and regional borders.

Source: OpenStreetMap.

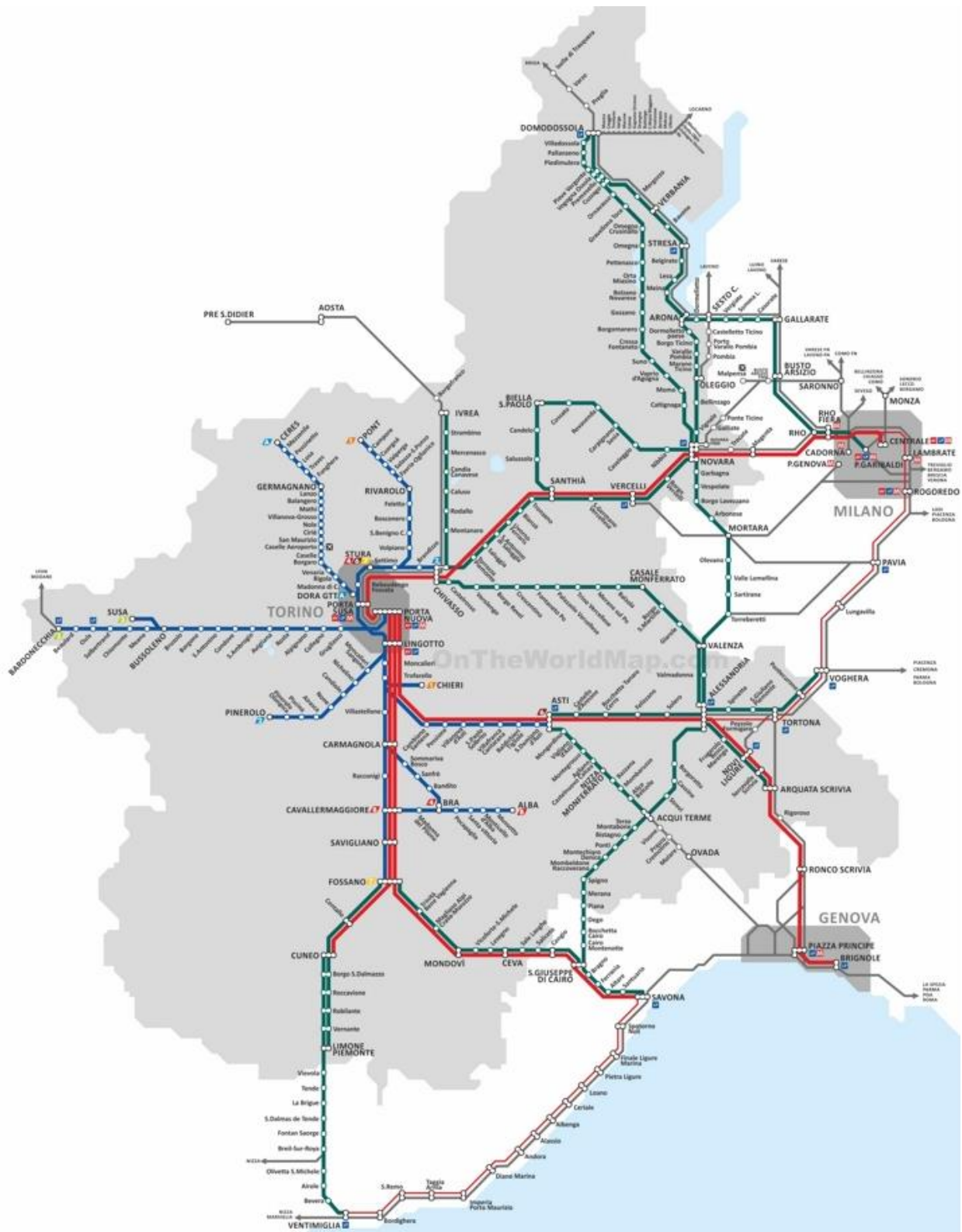


Figure 3: Intercity train connections and stations.

Source: <https://ontheworldmap.com/>.



Erasmus+



Project “SPOT. Sustainable Spatial Planning of Tourism Destinations” was funded under the Erasmus+ Programme (2019-1-PL01-KA203-064946) [www.spot-erasmus.eu](http://www.spot-erasmus.eu)

## Stakeholder analysis

During the stakeholder analysis process 10 most important stakeholders were identified:

1. **Piedmont region authorities:** The regional government of Piedmont, especially people and entities related to tourism and transportation, for example: President of the provincial government, Committee II (town planning, transport), and Committee III (tourism). They have the most power over the LRM landscape, having access to the most resources out of all the stakeholders.
2. **Province councils (Asti, Cuneo, Alessandria):** The three province councils Asti, Cuneo, and Alessandria cover the vineyard region of Langhe-Roero and Monferrato. The councils are usually positioned above the local municipalities in terms of decision-making and regulation and policies. But since this region is a UNESCO site, the local municipalities are in direct contact with the Piedmont region authorities. Therefore, their power to make decisions related to the vineyard landscape of Piedmont is relatively equal to the local municipalities. Additionally, the three councils have less interest in the vineyard landscape than the local municipalities.
3. **Ente Turismo Langhe Monferrato Roero:** According to Regional Law 14/16, the Langhe Monferrato Roero Tourist Board is recognized by the Piedmont region as a local agency for the reception and promotion of tourists. Public and private members are parts of it, such as regional municipalities, unions of municipalities, the Piedmont region, trade associations, and tour operators (directly or through consortia to which they belong). A tourism organization promotes Langhe-Roero and Monferrato through a variety of communication channels, promotes important events, and prepares and distributes promotional materials for the region at tourist offices, and national and international exhibitions. Considering the facilities and power given to them by the government and that they are directly related to the issue of tourism and empowering the region, they are almost in a good category in terms of the power of change and dialogue with the main factors.
4. **Local municipalities:** There are multiple local municipalities that are directly managing and providing services to the vineyard region of Langhe-Roero and Monferrato. These are Langa of Barolo, Grinzane Cavour Castle, Hills of Barbaresco, Nizza Monferrato and Barbera, Canelli and Asti Spumante, Monferrato of the Infernot. Local municipalities have among the stakeholder the highest interest because they are very closely connected to infrastructure changes in the UNESCO site.
5. **Wine producers and vineyard owners:** Since the production and making of wine is the biggest and most important industry in the region. The focus is on attracting tourists and generating income from wine and its accessories. As a result, the level of need and influence of those who work in this industry is significant. In order to grow and gain more power, they need to attract sponsors and regional powers. The improvement of their daily commute is crucial for the growth of their work, as a result, they have high demand and moderate power.
6. **Residents:** The region's residents and those who have other jobs besides winemaking are also considered to be one of the main beneficiaries of tourism, and of course, they are interested in changes and ease of transportation, but since they are not a large group, it is unlikely that they will have much influence.
7. **UNESCO management body:** The Ministry of Cultural Heritage and its regional agencies are in charge of enforcing the Law on Cultural Heritage and Landscape (Decree No. 42 of January 22, 2004), which protects the property. The duties of the public regional and municipal authorities are outlined, along with the application processes. The permits for construction and reconstruction projects are regulated and controlled by the municipality. They achieve this by making reference to urban

development plans and municipal regulatory plans. The Provincial Law of September 30, 2013, confirmed the protection of buffer zones.

8. **Tourists (staying at least one night):** A tourist can be defined as a person who is participating in tourism activities. Staying at least one night away from the normal residence is the distinction between daily visitors and tourists. These tourists who are visiting the vineyard destination could be international or people from the same region or from the rest of the country.
9. **One-day visitors:** One-day visitors are those who are coming to the destination in order to taste and buy regional wines that are being produced in the area. However, daily visitors don't spend the night at the destination, it is considered that they will contribute a great percentage to the local economy.
10. **Public transportation operators:** Public transportation operators are for example private businesses that manage and provide transportation of tourists and residents in a specific area. When both wine and tourism activities grow in the area, there will be a need for public transportation operators.

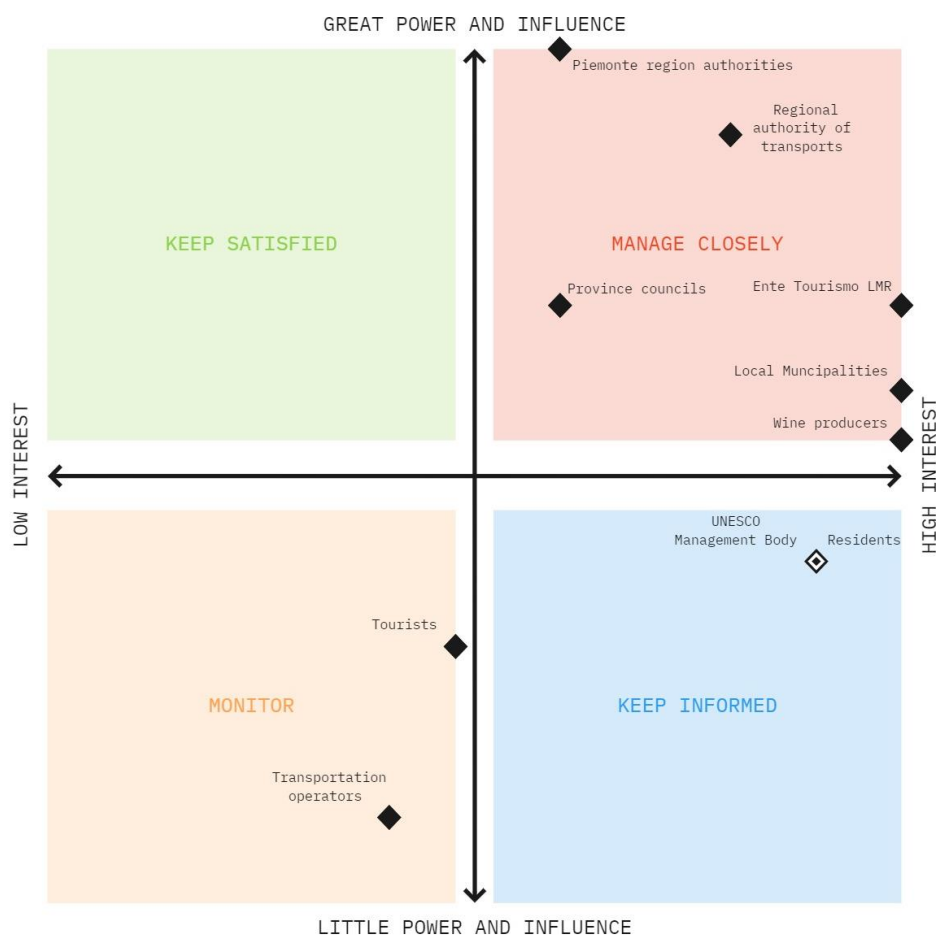


Figure 4: The map of the stakeholders influence and interest.

Source: own elaboration.



## SWOT analysis

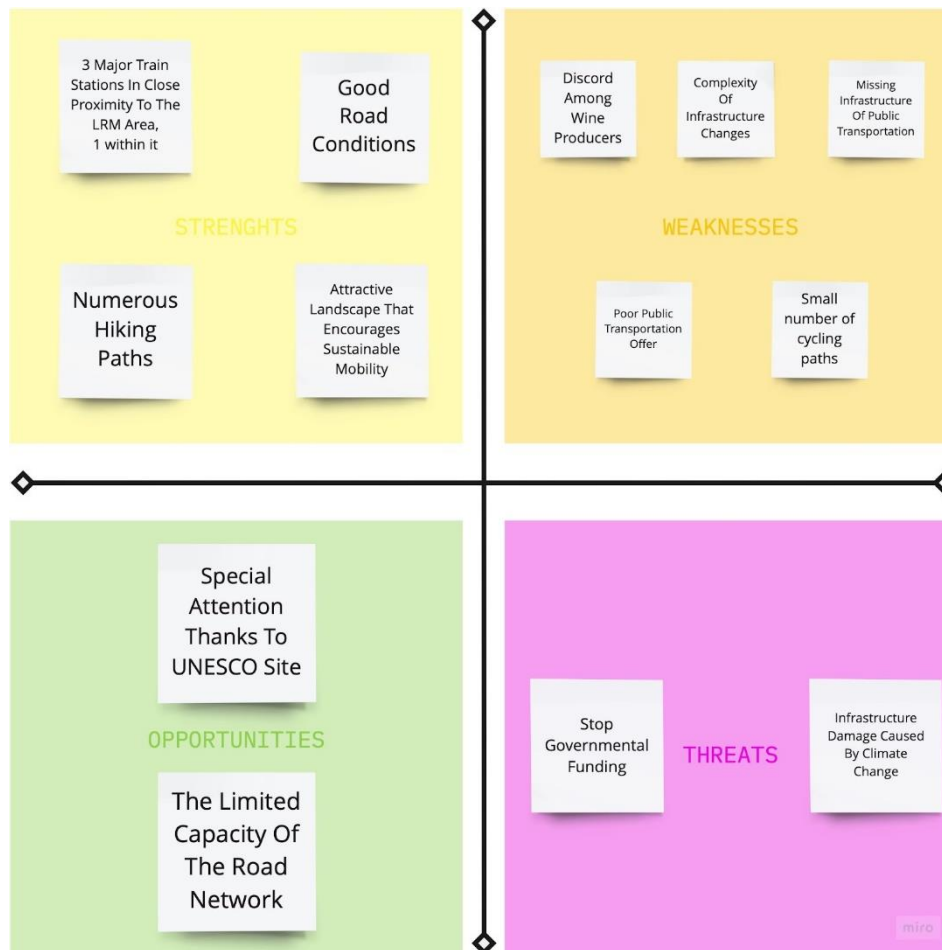


Figure 5: SWOT analysis' results.

Source: own elaboration.

**Strengths:**

- **Major train stations:** There are three major train stations in proximity to the buffer zone of the LRM region. These are the following: Asti, Alessandria, and Bra. Additionally, one train station which is in Alba is just within the buffer zone. Having train stations, where some are directly connected to two big metropolitan cities (Turin and Milan), can be helpful in receiving tourists that choose to travel by train. In this context, the region could benefit from the existing public infrastructure and a more sustainable way of arriving in proximity to the UNESCO site.
- **The attractive landscape that encourages sustainable mobility:** The LRM region has a very picturesque landscape and stunning nature. This can be seen as an important strength in many aspects. For instance, the region's nature attracts tourists that lay specific importance on a more sustainable way of traveling. They choose to stay in sustainable accommodations and try to keep their carbon footprint low. Furthermore, because of the stunning views, tourists want to enjoy nature on foot and with their bicycles (E-bike) which contributes to the more sustainable development of the region in terms of the CO2 footprint of tourists. A high number of hiking paths across the region

also encourages more movement in a more sustainable way. It can be concluded that the infrastructure for sustainable activities like hiking, trekking, and cycling already exists in this area.

- Good road conditions: The roads are in good condition and are reliable for tourists as well as operating businesses like vine producers and freight transportation companies.

#### Weaknesses:

- The missing infrastructure of public transportation: The missing infrastructure of public transportation represents the main weakness in relation to mobility and accessibility in the LRM region. It contributes to the increased use of private and rented cars to access and move within the LRM region.
- Poor public transportation offer: A reliable public transport system in the LRM region for the purpose of transporting tourists does not exist. There are only some buses that are used for the transportation of school classes. Other buses that operate in the region are also not being used as a means of transport by tourists.
- Discord between wine producers: It was observed during the interview that wine producers are not very open to collaborating with each other. This means that problems that require a collective approach related to mobility and accessibility issues will be more difficult to solve.
- The complexity of infrastructure changes: Because of the hilly terrain, changes in the infrastructure can be more complex for planners and conductors. For instance, that would limit the possibilities of constructing important roads, intersections, and train tracks.

#### Opportunities:

- Special attention thanks to the UNESCO site: Since the LRM region includes a cultural and a natural UNESCO site, the opportunities are high that many stakeholders will invest in the success and preservation of the site. Therefore, investments would also be made in the infrastructure of the region.
- The limited capacity of the road network: With a limited capacity of the road network which is not adapted to the number of tourists, discouragement of the use of cars can be achieved. An increase of tourists moving within the region with their cars could potentially be even prevented.

#### Threats:

- Stop governmental funding: If regional or national funding is stopped, the maintenance of the infrastructure and sustainable development of the LRM region in terms of mobility and accessibility could be jeopardized.
- Infrastructure damage caused by climate change: Climate change-induced landslides and floods could damage the transport infrastructure used for tourism and the economy in the LRM region.

## Policy recommendations

The main identified problems in the area are:

- Minimal to non-public transport,
- Traffic jams and parking shortages during high tourist seasons.

Based on the study visit to the LRM area and the conducted SWOT analysis, a policy recommendation was created to deal with the identified problems. The proposition is to construct multimodal hubs on the outskirts of the LRM area which would consist of: a system for charging a fee if a tourist would want to enter the area in a car, a parking lot for them to leave their car there if they wouldn't want to pay the fee, a bike/e-bike sharing station and a bus station to provide alternative and more sustainable modes of transportation between the municipalities inside the area. To make the multimodal hubs functional, selected municipalities inside the area would also construct bus stops and especially bike sharing stations.

The multimodal hubs would be located in 6 cities surrounding the case study area: Acqui Terme, Allessandra, Asti, Bra, Casale Monferrato, and Dogliani. As well as in 1 city inside of it, Alba. They can be seen on map number 4. The cities were chosen because they are close to the area and all of them have major roads going through them. Additionally, Allessandra, Asti, Bra, and Alba have important train stations for visitors arriving from Torino and Milano.

The system of charging a fee for entrance to the LRM area would consist of a self-service checkout where a visitor could stop his car without blocking the road and buy a pass that would allow them to enter with a car. Visitors with disabilities would be exempt from the fee, as most of them need a car to travel. The biggest, in terms of area, part of each hub would be the parking, which would allow visitors to leave their cars outside the LRM area and change to a bus or a bike.

The most important part of the solution is the bike sharing system similar to the ones in Torino but adjusted for the much bigger distances of the study area, mostly in the hourly rates. Bikes were chosen as the main way of transportation as they are the most sustainable option, and they allow for the same (or even more) freedom as driving a car does. To encourage as many people as possible, electric bikes will also be part of the system. Even though few cycling paths were identified in the SWOT analysis, the good condition of the roads, the fact that bikes take much less space than cars, and the picturesque landscape of the LRM area encouraging cycling still make bikes more than a feasible solution.

Public transport in the form of buses compliments the bike-sharing system, as even electric bikes are not a viable mode of transportation for everyone. Since sustainability is one of our key goals, the use of hydrogen buses is the best possible solution. Even though this part of the recommendation is probably the most costly, it would serve not only tourists but also local people as it would be a reliable form of moving around and out of the LMR region. The proposed solution also capitalizes on the opportunity that the limited road capacity provides because traveling with cars inside the LRM area is already discouraged by traffic jams and parking shortages.

To make the solution a reality, action should be taken by local municipalities, which will need to cooperate between themselves and also private transport operators to make the system function effectively. Ente Turismo LMR can help to organize it as an actor overseeing the whole area, which is also very interested in developing new and better ways of managing tourist movements inside of it. As the proposed project is big, help from the regional government to organize it might also be required.

The beneficiaries of the solution will be:

- Residents living in the LMR landscape,
- All businesses in the LMR landscape,
- Tourists visiting the area,
- Ente Turismo LMR,
- Municipalities inside the LMR landscape,

- Municipalities where the multimodal hubs will be built,
- Operators for the buses and bike sharing,
- Construction companies building the necessary infrastructure,
- Company providing the hardware and software for the toll system.

The resources needed for the solution are:

- Finances,
- Spatial planners,
- Transportation engineers,
- Construction companies,
- Company operating bike sharing system,
- Company operating buses,
- Hydrogen buses.

The finances needed for the solution could come from the regional government as well as the national one. As the solution is heavily focused on sustainability, there is also a potential to gather subsidies from the European Union. Both spatial planners and transportation engineers could come from Politecnico di Torino and University di Torino. Construction companies and operators could be contracted under public-private partnership, where some of their taxes would be lower for the smaller price of their services.

The created proposal is composed of many subsystems. Some of them are able to function on their own, but they were merged into one solution to give a more holistic overview. However, they should be implemented one by one as it would be more manageable and would spread the costs over time. The timeline for the implementation is presented in Figure 6.

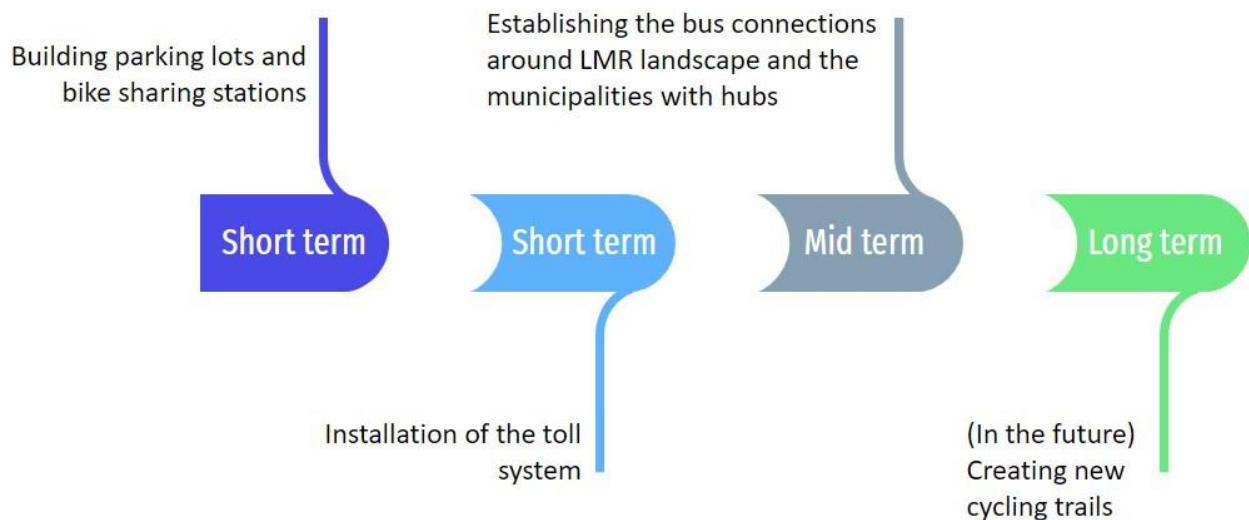


Figure 6: Timeline for the implementation of the proposal.

Source: own elaboration.

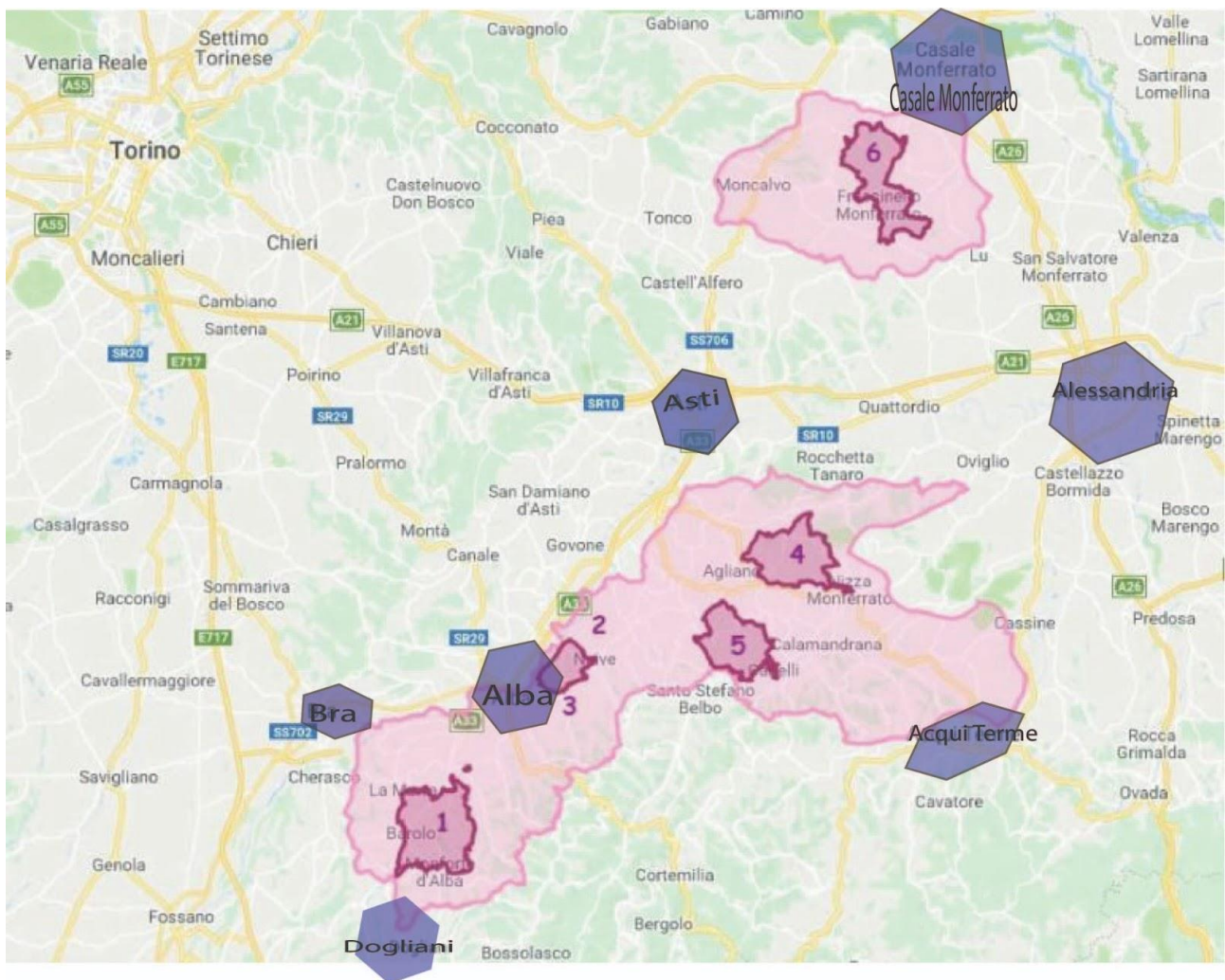


Figure 7: Buffer zones of the LMR regions along with the cultural UNESCO sites.

Source: own elaboration. Cultural UNESCO sites in dark red, multimodal houses in blue.

## References

- Brugha, R., & Varvasovszky, Z. (2000). Stakeholder analysis: a review. *Health Policy and Planning*, 15(3), 239-246.
- Gerring, J. (2007). The case study: what it is and what it does. In: *The Oxford handbook of comparative politics*.
- Gil, A., Calado, H. & Bentz, J. (2011). Public participation in municipal transport planning processes – the case of the sustainable mobility plan of Ponta Delgada, Azores, Portugal. *Journal of Transport Geography*, 19(6), 1309-1319.
- Jeon, C.M., Amekudzi, A.A., Guensler, R.L. (2013). Sustainability assessment at the transportation planning level: Performance measures and indexes. *Transport Policy*, 25, 10-21.
- Lindenberg, M., & Crosby, B. (1981). *Managing development: The political dimension*.
- Litman, T. & Burwell, D. (2006). Issues in sustainable transportation. *International Journal of Global Environmental Issues*, 6(4), 331–347.

- Luyet, V., Schlaepfer, R., Parlange, M.B. & Buttler, A. (2012). A framework to implement stakeholder participation in environmental projects. *Journal of Environmental Management*, 111, 213-219.
- Page, S., & Lumsdon, L., (eds.) (2004). *Tourism and transport: Issues and agenda for the new millennium*. Boston: Elsevier.
- Sorupia, E. (2005). Rethinking the role of transportation in tourism. *Proceedings of the Eastern Asia Society for Transportation Studies*, 5(11).
- Tambe, P. R. (2015). Overview of Indian Fertiliser and SWOT Analysis of Fertiliser Industry. *Paridnya-The MIBM Research Journal*, 3(1), 17-29.
- Yin, R. K. (2018). *Case study research: Design and methods*. Applied Social Research Methods Series, 6. Sage Publications.