

## Mobility Infrastructure Supporting Tourism Economy in the South of Albania

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**Abstract** - Due to its position at the border with Greece, which is also the merging point of two seas – Adriatic and Ionian - the region of Finiq embraces a long history of ancient cultures and consequently its heritage embodies a stunning variety of elements, both natural and anthropic. Thus, the trans-regional connection nowadays consists of national roads only, which collect the whole traffic of private cars and buses. The local subnetwork of roads suffers critical peaks on the coast during the summertime, while the villages of the countryside are still perceived as remote destinations and are increasingly underpopulated. At the state of art, the European blue corridor is already planned to cross the Gjirokastra inner valley of the region in the north-south direction (Fig1), and an airport is considered to be built in the flat area behind Saranda next to the Butrint Lake. These actions could respond to international connections but will not solve themselves the issue of local mobility in terms of sustainability and accessibility. How to increase the accessibility of the area, enhancing the development of tourism as well as the local economy, preserving the environmental qualities at the same time? This is the main research question in analyzing possible models of mobility from the scale of the international infrastructure framework to a small-mid size network of towns and villages. More specifically: how can digital mobility services enhance the multimodality, thus the sustainability and the accessibility of the whole area? Attractivity may be intended in several ways, as many as the possible business models in the tourism industry. Experiences such as the one on the southern coast of Spain show how over-spoiling local territories with mass tourism generated a post-boom heavier crisis (Fig2). Considering that, sharing a vision about the identity appears to be the key act of the process. The research compares possible mobility models according to different infrastructure systems, trying to predict their impact in terms of regional planning. The a-dimensional scale of information technology will be the crucial tool to challenge the global trend of digital services in mobility, enabling the services offered by the infrastructures in an augmented user experience. Considering the natural environmental conditions and the value of its heritage, the Finiq region can aim to become a virtuous model for slow instead of mass tourism. As the local communities and the economic lobbies negotiate a balance point where to agree, recognizing a common set of values on which to promote the area, the mobility infrastructures will enhance the shared vision by providing transportation accordingly. Given a variable scenario as a result of this process, mobility will anyway be an ecosystem of different networks and vectors to be linked and tuned together, in order to make them work in a more sustainable way and make them available to the users. Digital services such as an open data server with a dedicated app can realize the collection of all information not only regarding routes, tickets, rent, parking, etc...to provide a better user experience to citizens and tourists, but also useful parameters about air/water/soil pollution, noise or CO2 footprint of transportation to fine-tune the ecosystem of mobility during the time.

**Keyword** - Smart mobility, Digital Mobility, Sustainable development

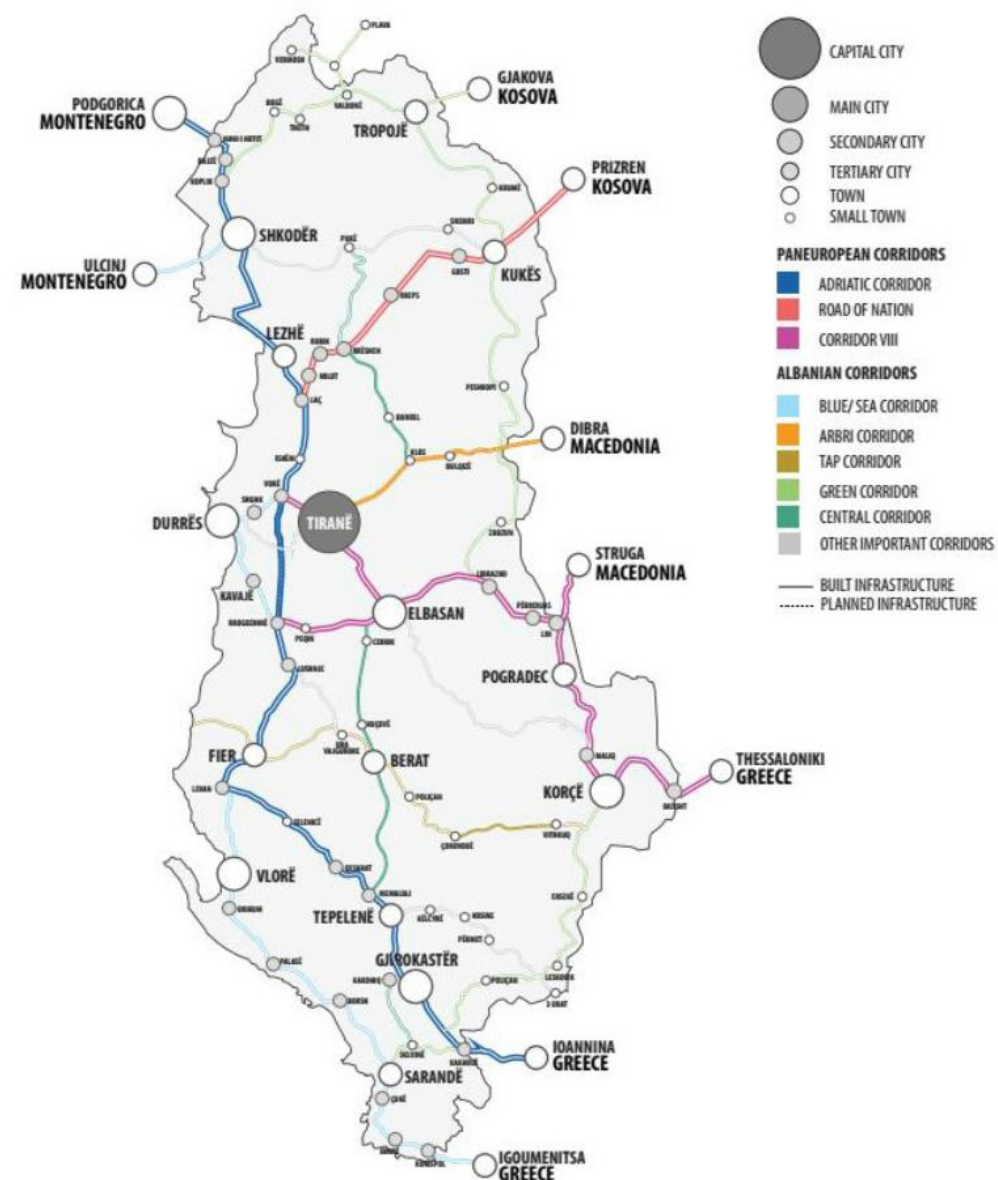


Fig1 / Albanian and Pan European Corridors  
source / Albania 2030 - Manifesto



Fig2 / City scope of Benidorm, Spain  
Source/ Wikipedia

## Introduction

Infrastructures and mobility policies are key issues in the development of every national economy: the case study of the South of Albania addresses how tourism can be the driver for the implementation of mobility infrastructures from a large-scale design perspective. Choices that are made at that matters can significantly encourage different development models, depending on the target of users for which they are made and the stakeholders that would benefit from them.

The remarkable increase of tourism in Albania in the last year, over 30% with 3,4 Mln of visitors only in the first semester of 2023, is a recent but significant element that places the country in the international network of tourist destinations (Fig3), both from western and eastern Europe thank its position in the Balkans on some of the most beautiful coasts of the Mediterranean sea. Besides the well-known cities of Tirana, Durrës, and Vlorë, it is the southern part of the coast that foresees the main potential boost of the tourism economy, which could support the growth of the region (Fig4). The naturalistic and cultural heritage of the area hold on a millennial history that starts with Epirus kingdom and keep up with an extraordinary mixture of different influence and populations, but due to the political assessment of the last century remained in a condition of isolation within the country as well as with the nearby areas. The orographic conformation of the territory also did not facilitate easy way across mountains and valleys as it happens in large flat areas. Nowadays most of the passes are still on the historical mountain

routes (Fig5) and the main investments in mobility infrastructures were placed for the bridges to cross the many beautiful rivers of the region. The landscape has an incredible variety of situations within a very small area, due to the short distance between the coast of the seaside and the mountains of the countryside.

## Research Question

So, now that the region regained a key position on the map, how to reconnect it with its surroundings and create an inner network to fully enhance its potential? What strategies and actions are more likely to be applied in order to create an efficient and sustainable system of networks and vectors? In what terms might different planning affect the environment and the human activities taking place in it? Placing these questions early on in the planning process means taking into account the whole ecosystem of mobility, as a drive to connect the different scales of design, from landscape to urbanism and architecture. It also implies that the questions cannot be asked to only one category of professionals, as they concern several disciplines and need multiple expertise for their resolutions. The question indeed extends to integrated solutions, where to sum up the contribution of architects, engineers, agronomists, informatics, artists, and whoever is involved as part of the community. Everybody, from high-level politicians to local stakeholders, should ask himself what development model applies better to the Finiq region, given its context and condition.

## Methodology Used

It is fair to say that recognizing the identity of the place – its genius loci, so to speak – will be crucial to address its development and plan its future coherently with its culture and economy. With no heavy industries or large-scale manufacturing factories, the area kept its natural and environmental values almost intact through the centuries, although a certain amount of pollution affects the water network due to aggressive agricultural techniques. Due to these conditions, a substantial increment of tourism – both national and international – might play a key role in the growth of the local economy in the third sector. In order to manage the increasing amount of flow in terms of people and goods, the investments in the infrastructures of the region need to be pointed toward a direction that allows to maintain the original values of the area, defined by its heritage and

its nature. Therefore, it is desirable to investigate options keeping focus on solutions that could support a sustainable infrastructure network. A comprehensive perspective of sustainability will take into account social, environmental, and economic impacts. Social sustainability will be valued as the capacity to include people in the development process, generating opportunities for residents with a special focus on young people who are nowadays more prone to seek a job abroad. The number and the variety of stakeholders involved as contributors will be the first indicator of how much the process is horizontal and inclusive. The environmental sustainability will be evaluated with more standard parameters such as CO2 emission, energy efficiency, soil consumption, etc.. as key performance indicators. Financial feasibility will also be considered as a condition for the sustainability of the planning, taking



Fig3 / Tourist Map of Albania  
source / vidiani.com

**KORIDORET KRYESORE JUGORE**

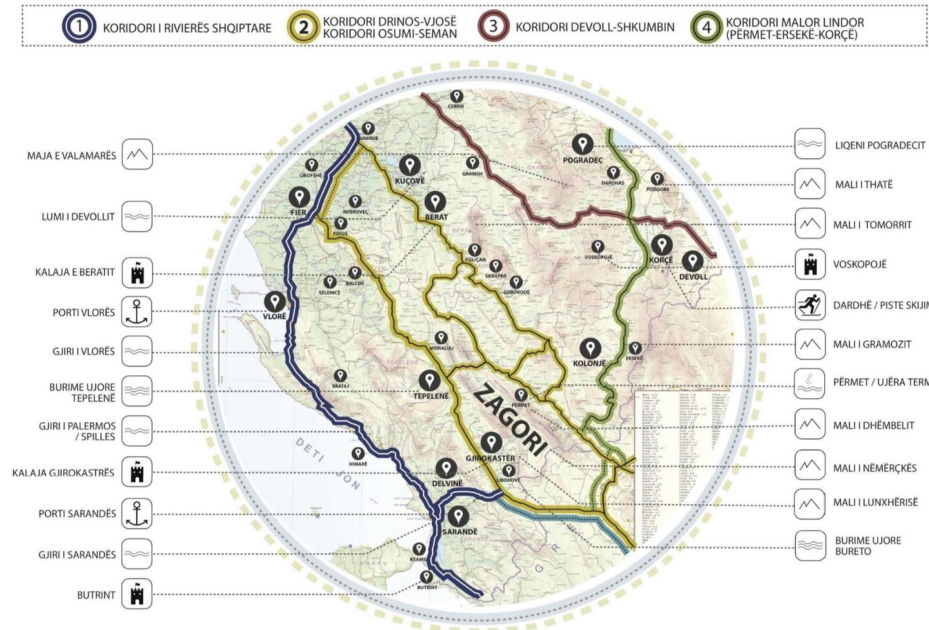


Fig4 / Highlights of the Finiq Region source / Rethinking Gjirokastra (2021)

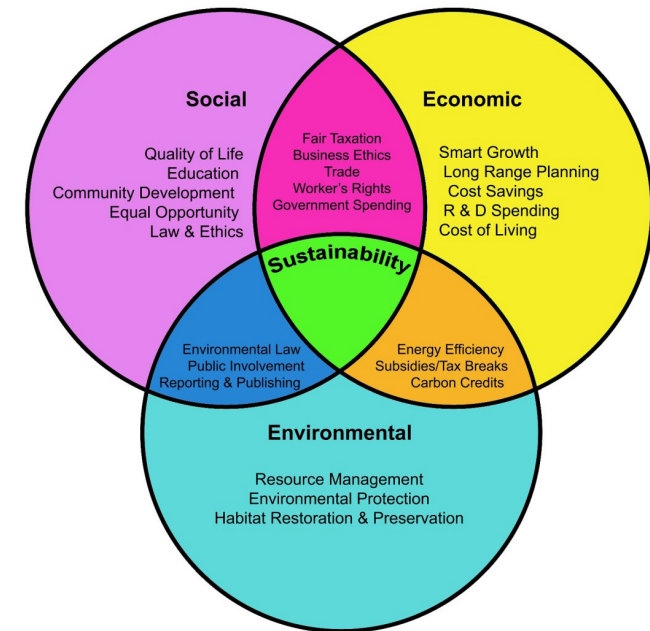


Fig6 / Social/Environmental/Economic Sustainability Diagram source / author

**Sistemi i Infrastrukturës**

**KORIDORET KRYESORE NATYRORE DHE EKONOMIKE NËDËRKUFITARE**

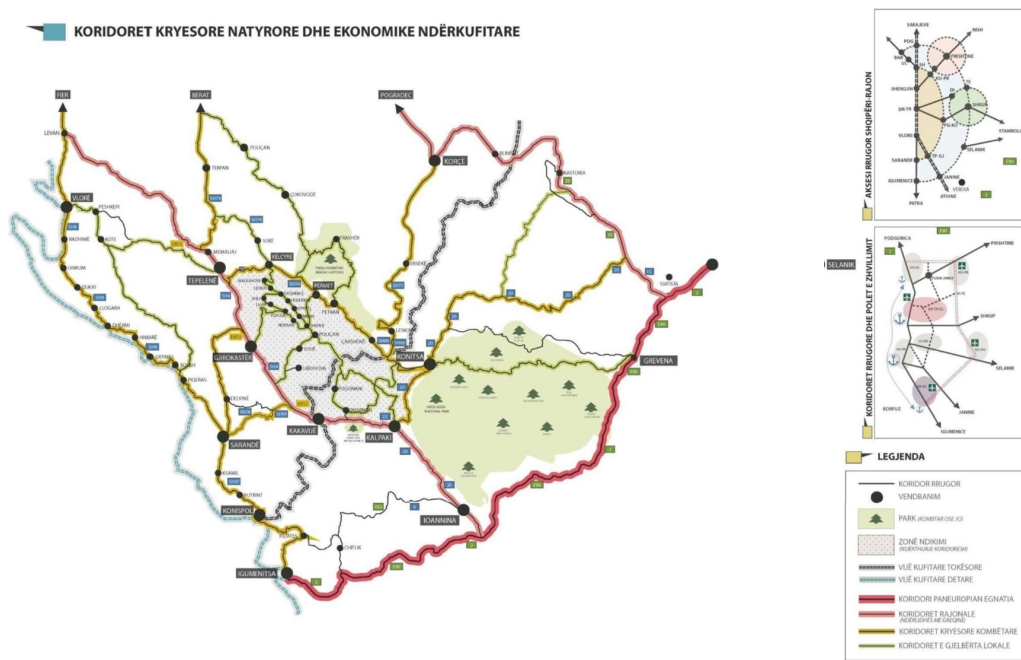


Fig5 / Infrastructures of the Finiq Region source / Rethinking Gjirokastra (2021)

into account the prediction of costs and revenue figures. The optimal solutions will take place at the intersection of these three main sets (Fig6).

**Results**

According to this vision, the first infrastructure plan to question is the new airport in the flat area between Saranda and Butrint Lake. The reasons for this rely both on the matters concerning pollution (air and noise) and the hydrological risk related to flooding in the rainy season. Because of the topography of the area,

the take-off and landing trajectories will force the planes to fly over the coast at low altitudes. Although these sorts of infrastructural challenges have become an attraction in themselves, such as the St. Martin airport (Fig7), in this case, it is more likely to compromise the overall naturalistic vocation of the area. Moreover, the Vlora airport is already under construction less than 150km away from Saranda. A closer airport is also located on Corfu island and although it belongs to a different country, it might be seen as part of the same transportation network

foreseeing Albania Joining the EU Union in the near future. As an alternative to a new airport, the re-development of a train network seems to be more suitable, giving the possibilities to have a fast connection from the capital Tirana to the region, stopping by Gjirokastra and far southern to Greece, while a low speed train might be running along the coast in a panoramic route.

Besides the environmental impact, which is incredibly lower compared to airplane traffic, the network of in-between stops of the railway would benefit not only the area itself, but also the local economy of the Albanian towns along the route, providing transportation for both people and goods in the development of economy on a larger scale area. The so-called "blue corridor" is already planned as one of the EU routes, crossing the Balkans until continental Greece. European corridors proved to be an economic boost for the countries that already benefit from such infrastructures, encouraging economic growth and international relationships among the involved countries. In combination with this high-speed connection, a low-speed line might run along the coast from Vlore to Saranda, giving the possibility to discover the beauty of the seaside with slow/naturalistic tourism as a target. This kind of transportation proved to be very attractive for the possibility of avoiding car traffic and other car-related issues and enjoying the full experience of a vacation in a naturalistic environment. That would also benefit the territory by not having to compromise the environment with car-oriented infrastructures, especially by

providing large areas for parking. Some examples of low-speed panoramic train might be found in the Swiss Alps, where the Bernina Express (Fig8) basically provides a car-free service to explore the beauty of the mountains, or the Cinque Terre Express in Italy (Fig9), which takes a north-south route in the Italian region of Liguria with a stunning panorama along the coast.

Once the transportation to the region is provided, it becomes crucial to provide a mobility network to move within it, in order to reach all its locations, which extend from the seaside to the mountains. While car rental is already an option to freely move on the existing road network, the increasing amount of visitors would make it unable to support a massive growth of traffic, considering the already critical situation during the peaks in summertime. Enlarging or creating new roads does not seem a reliable way to solve the problem, not to mention the lack of space in the town centers for providing adequate streets and parking spaces. Moreover, during the long-term process of car electrification also air pollution has to be taken into account for an impact evaluation.

In order to move more people and goods with fewer vehicles, a viable strategy is to differentiate the typology of transportation according to the needs of different targets. The new train stations will be crucial nodes in the network as the first ring of a chain of multimodal hubs, where the design is conceived to integrate different layers of mobility and easily switch from one to the other like in the central station of Utrecht (Fig10). Engine



Fig7 / Princess Juliana International Airport, Sint Maarten  
source / wikipedia



Fig8 / Bernina Express, Lugan, Switzerland  
source / wikipedia

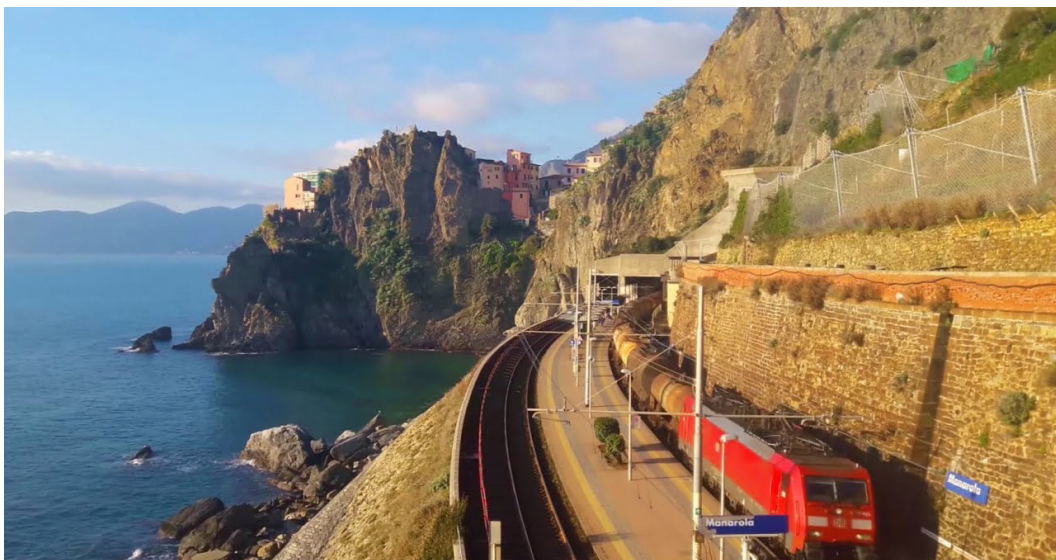


Fig9 / Cinque Terre Express, La Spezia-Levanto, Italy  
source / wikipedia

powered vehicles will still be the best option for long-distance travelling, but they could be managed in a more efficient way by applying MaaS2 model principles. Instead of individual property or rent, it is likable to imagine a network of spots where to pick up cars or vans for single trips, with the possibility of sharing them with other people taking the same journey. That would allow us to reduce the total amount of cars and the parking spaces needed to place them during the visiting stops. It is also recognised as a global trend the use of light electric vehicles such as e-bikes or cargo bikes, that can be rented directly on locations and provide a better experience in exploring places away from traffic congestions. That especially works in a natural context where silence and air quality are perceived as added values. Besides the rental network, also dedicated infrastructures are needed in order to keep bike lanes separated from roads. That allows not only to keep the bikers safe from faster vehicles, but could also be as well an opportunity to develop an economy based on dedicated services such as restore, repair, and recharge. Also traditional transportation like horses can be offered as an alternative to tourists to enjoy the natural beauties of the region along the historical paths that have been used for centuries before the invention of the engines. In this case the infrastructure network is already in place but underused, and that could be the opportunity to revalue them through its maintenance and restoration. Last but not least, hiking is also practiced as an activity that perfectly fits with the profile of nature-oriented tourists, and it surely is the most sustainable modality for exploring areas with environmental values. As these activities grow they can generate related economy such as competition, meetings, and congresses. The Albanian mountains

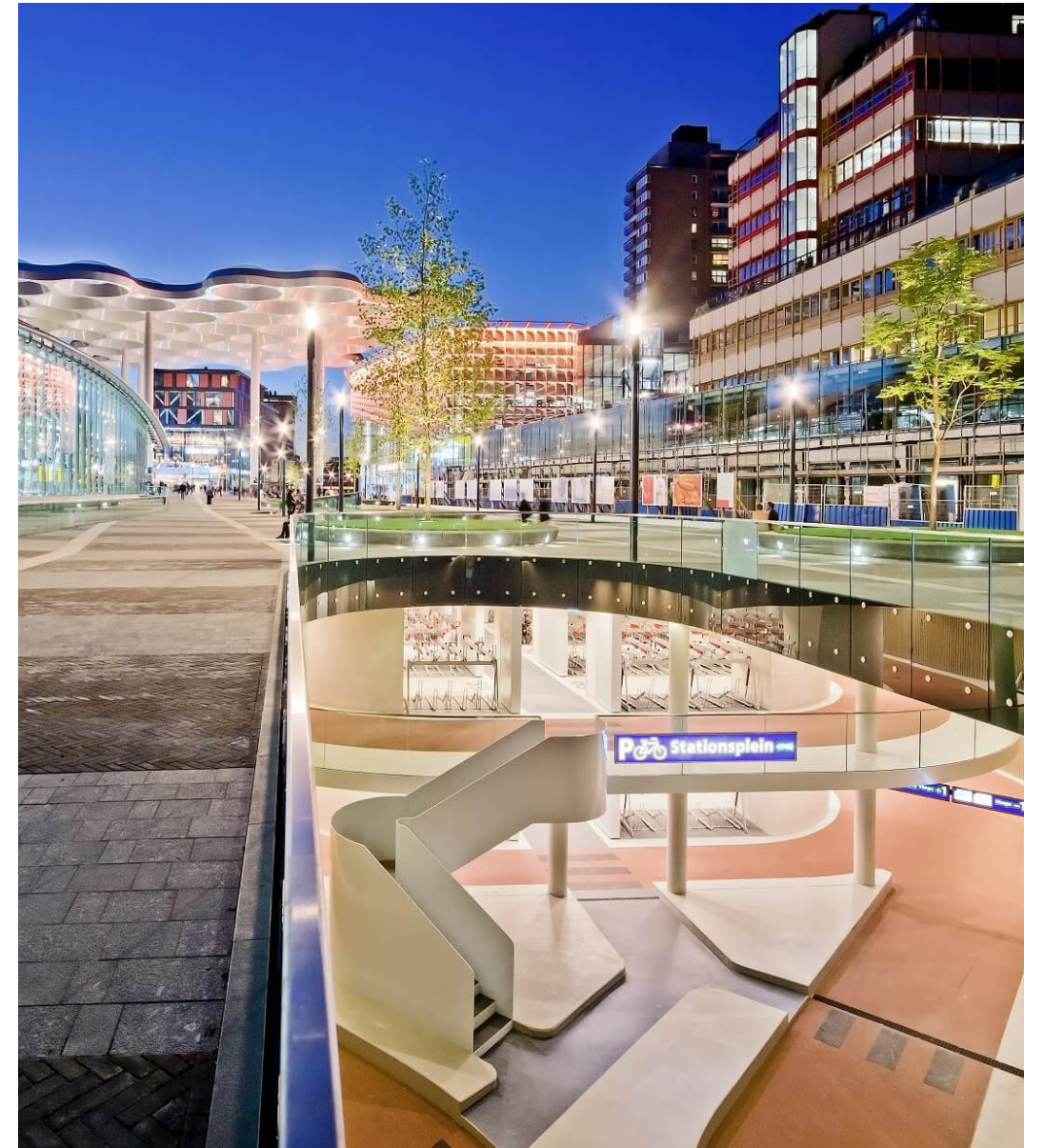


Fig10 / Stationplein, author: Ector-Hoogstad-Architecten, Utrecht, The Netherlands  
source / wikipedia



Fig11 / Adamello Ultra Trail, Brescia, Italy  
source / wikipedia

still preserve an estimated amount of nearly 175,000 military bunkers from the XX Century, as well as the Adamello Mountain in the Province of Brescia where takes place the Ultra Trail Race, with more than 700 participants (Fig11).

The information technology is the tool to combine all these different kinds of mobilities. Mobile or desktop applications can easily allow one to plan trips in a multi-modality mode, with features that give the possibility of defining routes, buying tickets, or reserving vehicle to rent in place (Fig12). Also in-place elements such as virtual screens can help in tourist orientation and use. Developing applications can also encourage a 4.0 economy and relate virtual to reality, promoting activities and places of the region and making them accessible and desirable.

### Conclusions and Recommendations

This vision of sustainable, multi-modal mobility represents a key factor for the leap from car-based mass tourism to a healthy economy which does not compromise the expectation for the forthcoming growth of the region with the preservation of the stunning beauty of its nature and the incredible cultural and historical heritage. Currently the Finiq region has the hype and all the potential for a long-term plan which places it among the top destinations for tourism. Starting from its strategic position on the map, it has in itself an ancient and compelling multi-centuries history from the Epirus Empire to nowadays and yet preserves all kinds of naturalistic beauties, from the seaside of Saranda to the snowy mountains of

Gyrokastra. The valorization of these strengths, which allows to position the location on a high standard target market, is the polar star where to point in order to design a proper mobility infrastructure model, which can safeguard the region from uncontrolled mass tourism. Given that as a pre-condition, it will be possible as a consequence to orient the tourist offer toward the expanding target of cultural and nature-oriented visitors and thus to an overall more sustainable economy.

In order to achieve these results both in terms of quality and accessibility it is crucial to invest in 4.0 technology, which allows to manage complex systems such as a multimodal mobility network and can provide services on demand in real time. While the infrastructures of the XXth Century landed on the landscape with the weight of the steel beams and the concrete blocks of which bridges and tunnels are made, the information technology is a more subtle but equally disruptive innovation as it deeply influences our habits and behaviors. Nobody really knows what vehicles will be like in 50 years from now, and if we look back at those sketches that tried to figure it out in the 70s, it is very brave to try to guess it today without regretting it in a close future. They might be closer to a shared living room which autonomously drives to a pre-digitated destination, or we might explore the third dimension of space with the urban air mobility and so-called VTOL3 (Vertical Take Off and Landing) vehicles from dedicated vertiports. What is sure is that moving more people and goods implies more energy and eventually more space,

### MOBILE APP

**RESERVATION**  
(train/bus tickets, car rent, e-bikes, horses, etc...)

**ITINERARIES**  
(bus rides, bike lanes, horse areas, trekking, etc...)

**FACILITIES**  
(bus stops, charging stations, wc, wi-fi, etc...)

**COMMENTS**  
(feedbacks, suggestions, etc...)

**CO2 EMISSIONS**  
(carbon footprint of the trip)



Fig12 / Mobile Mobility App Diagram  
source / uthor

so either we can find an efficient and affordable way to move large quantities with low energy in dense vectors, or the consequences will be that mobility will be no longer a right but a privilege for those who can afford it, while the rest will only experience a virtual simulation of being somewhere.

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