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Research review on cycle tourism and the potential promotion of sustainable mobility. Initial implementations in Greece.

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Abstract

Cycling and walking are among the most sustainable means of transportation, gaining a lot of attention in recent studies on the field and attracting European funding potential. Two of the key Sustainable Development Goals (SDGs) include the building of low impact infrastructures and the reduction of actions and procedures that contribute to climate change. Thus, cycling mobility and cycle tourism are intertwined ideally with the forthcoming needs and restrictions that will allow sustainable approaches in building infrastructure with an added value in the urban and peri-urban environment.

This paper explores the current infrastructure in Greece and the policies implemented in the country as well as the existing cycle tourism strategy formulated in 2008, examining the progress, the identified obstacles and the future potential in promoting cycle tourism in the Greek periphery. The project discusses the benefits of developing cycle tourism in areas that present high car-dependency, focusing on the environmental and transport dimension as research shows that strategic infrastructure and policies for cycle tourism can directly promote cycling and walking mobility as well as alterations in daily commuting behavioral patterns.

Keywords: cycle tourism, Greece, cycling mobility, regional planning

1 Introduction

Many cities and regional areas are planning major changes to their street network in order to accommodate cycling infrastructure and make their urban environment more people oriented and in a human scale. Bike-friendly cities are constantly emerging in Europe and the USA, due to their positive impacts in terms of social, environmental and economic life. Adomaitis (2014) argues that the spread of cycling seems to be one of the most important contemporary trends changing cities' vibes and local lifestyles. It is considered that adequate cycling infrastructure, when combined with dense public transport networks attracts people to city centers, alleviating traffic congestion and allowing the upgrade of public spaces. In this respect, cycling can be a tool for tackling urban sprawl and achieving the development of compact cities. Given the fact that half of all trips in European cities are shorter than 6km (EEA, 2001), the bicycle can be the ideal alternative to the car, as it has significantly smaller travel costs and saves time in regards to searching for parking. It also provides autonomy in time schedules, especially in regards to public transport. Upgrading cycling

infrastructure is commonly linked with the upgrade of the pedestrian environment as vulnerable road users are the focus of planning in such activities.

Cycling and walking are activities that can be accomplished both as a utility (i.e. means of transport) and as leisure activity (i.e. friends and family rides, competitive trips, hiking trips, night walks etc.). The infrastructure provided for cycling can be found and/or created in urban environment such as shared roads, bicycle lanes, bike paths, standard street networks etc. or in the suburban and regional environment in cases like bike trails, off – road paths for mountain biking etc. Cycle mobility and cycle tourism bring significant benefits compared to many other forms of transportation and leisure activities for a number of reasons and in several sectors. Cycling has many positive impacts on health and the environment, affecting one's physical activity, safety, air quality and noise, and climate in general (ECF, n.d.). Being effectively silent and producing no emissions, along with walking, they remain the greenest modes of transportation, while also contributing to the reduction of congestion and journey times. The economic benefits of cycling, walking and intermodal travelling (walking and cycling, walking and using public transport, cycling and using the public transport) vary from individual savings (i.e. gas, time, maintenance and insurance costs etc.) for daily commuting to overall benefits from direct and indirect expenditure and employment in the cycling industry. Other benefits include the increased social interaction, strong sense of belonging to a place, improved traffic safety after roadwork implementation and many more.

The cycling industry has a lot to gain from this trend as a critical number of jobs including retail, engineering and tourism, can benefit directly. A 2013 study by the European Cycling Federation (Kuster & Blondel, 2013) has demonstrated that Europe's cycling industry now employs more people than mining and quarrying and almost twice as many as the steel industry, according to the first comprehensive study of the jobs created by the sector. Nearly 655,000 people work in the cycling economy – which includes bicycle production, tourism, retail, infrastructure and services. The same study suggests that the lion's share of jobs in the new free-wheeling economy are in bicycle tourism – including accommodation and restaurants – which employs 524,000 people, compared to 80,000 in retail, the next highest sub-sector. According to a recent study requested by the European Parliament's Committee on Transport and Tourism (Thomas, 2012), the total economic benefits for the 2.295 billion cycle tourism trips around Europe per annum is approximately estimated in €44 billion. Bike sharing schemes also provide new horizons as advertising platforms, due to the positive feelings that cycling can create. Adomaitis (2014) supports that advertising on bicycles generates positive feelings for associated brands, as “cycling” is positively perceived thanks to a number of useful health-related effects.

The cycling industry in Europe and the US is largely developed around cycling tourism, a sector highly linked to the contemporary lifestyle of healthy living, an attraction to active tourism and the searching of authenticity in nature of the destination. Cycle Tourism can be defined as recreational visits, either overnight or

day visits away from home, which involve leisure cycling as a fundamental and significant part of the visit (Sustrans, 1999). CYRONMED (2008) has identified the three main types of cycle tourism as Cycling Holidays, Holiday Cycling and Cycling Day Visits. Cycling holidays have cycling as the main purpose of holiday, whereas holiday cycling involve some cycling whilst on holiday. The latter, Cycling Day Visits, involves setting out from home by bike, or taking the bike by car or train, for a day or half-day cycle ride. Several studies tend to identify the profile of the cyclist-tourist as being educated on a high level, with a medium to high income and travelling to small groups, with a high budget and choosing quality destinations. The activities involve all types of trips ranging from quick cycling trips to organized daily tours visiting specific attraction nodes (i.e. wineries, breweries etc.).

Promoting cycle tourism implies a number of strategies, policies and actions initiated both by the public and the private sector. Countries like Austria, Denmark, Switzerland and Germany have developed concise strategies properly accompanied with substantial infrastructure allowing the further potential evolution of cycling. Policy-makers in most European countries are aware of the benefits of cycling as well as of the fact that (Department for Transport, 2014) cycling has consistently provided higher returns on investment than any other transport mode. It is crucial to consider that according to ECF (2014) it is estimated that the resources that are likely to be available for specialized and explicit cycling activities (i.e. infrastructure, cycling tourism etc.) are notably higher in Spain, France, Germany, Poland and Hungary. On the other hand, funds for sustainable transport that can include cycling-related measures and policies will be particularly higher in countries like Croatia, Bulgaria, Greece and Cyprus.

Walking is considered a complementary and more profound activity that is often neglected in planning for sustainable cities, although it should be a priority axis in mobility terms. Planning for cycling and walking encourages social cohesion and is the core of compact cities and vivid regional communities. Various urban cycling implementations have a direct impact on the neighboring pedestrian facilities, while several planning parameters of cycling focus on enhancing pedestrian safety.

This study, although referring particularly to cycling related activities, assumes that the promotion of cycling mobility as a positive outcome of cycle tourism, will also affect pedestrian infrastructure and encourage enhancements in the overall cityscape and in public spaces.

2 Greek cycle tourism strategy and implementation progress

Tourism plays a critical role in the economic development of Greece, being one of the leading sectors in the country, representing 18-20% of the national GDP (World Travel and Tourism Council Data, 2016). Travel and tourism are remaining stable and even predicted to grow despite Greece's debt crisis between the years 2011-2016. Tourism in Greece covers 60% of the trade balance deficit, employs 1 out of 5

residents and generates 40 billion total demand (SETE, n.d.). The four major destinations attracting most tourist arrivals are Athens, Rhodes, Crete and Corfu, mainly between July and September with an average stay of 12, 29 days (CYRONMED, 2008). The Greek Ministry of Tourism, already since 2007, has identified the need for developing alternative tourism products and is undertaking special initiatives for developing destinations in mountainous areas, regional peripheral environments and islands. Following the European paradigm, Greece has considered cycling holidays as a supplementary activity to the common ‘sea and sun’ model, and thus has confirmed its lack in spatial planning and attractive infrastructure for cyclists and other activity tourists.

Cycle tourism during times of economic hardship can be considered as a viable alternative or supplementary activity to the existing forms of tourism, in order to attract more travelers in domestic holiday patterns. According to Zovko (2013), personal financial constraints encourage people to take fewer overseas and more domestic holidays, thereby increasing the likelihood of taking bikes with them on their trips, given the fact that policies and infrastructure are in place and contribute to this trend. By increasing the number of domestic holidays it is possible to increase the total income coming from cycling tourism. Greece is still quite low as far as concerning cycling trips, as Table 1 show. Only in ten countries in the European Union cycle trips are fewer.

Country	Daytrips (million)	Overnight trips (million)	Daytrips (billion €)	Overnight (billion €)	Total (billion €)
Germany	607	4.62	9.34	2.03	11.37
France	373	4.01	5.73	1.76	7.49
United Kingdom	149	1.23	2.29	0.54	2.83
Netherlands	138	1.01	2.12	0.44	2.57
Greece	21	0.23	0.32	0.10	0.42
Total (EU+NO+CH)	2,274	20.36	35.00	8.94	43.94

Table 1: Estimated economic value of cycle tourism in Europe.

Source: Thomas, M. (responsible administrator), 2012. The European Cycle Route Network EUROVELO Study. Available at: <https://ecf.com/sites/ecf.com/files/EP%20study%20on%20EuroVelo%20network.pdf> (Retrieved: November 2016).

The need for supporting and developing cycling tourism has been recognized by the public sector and tourist officials during the last decade and actions have been undertaken, however in small scale and through incoherent initiatives. The Special Spatial Framework for Tourism does not recognize cycling tourism as a separate tourism model although it is included in the Naturalist-Ecotourism aspects of alternative tourism approaches. The first approach on a national cycling strategy for Greece was formulated in 2008, through the CYRONMED project developing a cycle tourism strategy applying to most Mediterranean areas. Specifying the benefits in terms of economic, environmental and transportation terms the strategy initially



Figure 1: Attica Railtrail passing through urban and regional territories in Athens Metropolitan Area (background in ArcGIS World Topographic Map)

Source: XXXXX

highlights the upcoming upgrade of the tourism product quality. The profile of the cycle tourist who may be the future users of Greek cycle routes is defined according to several data and case specific phenomena. The studied elements in CYRONMED (2008) include age (40-55 years), number of persons per group (2.6, mainly couples), duration (1 week), cycling distance per day (20-30km), reasons for undertaking cycle holidays (1.relaxation, 2. being fit, 3. interest in nature), preferred itineraries (1.countryside, 2. forest, 3. wild nature), travel arrangements (1. by themselves, 2. via tour operators), food (light meal for lunch and a good quality dinner in the evening) and accommodation (high quality hotels and 'bed & breakfast' types). The strategy has also identified the key planning priorities including backbone infrastructure, secondary cycle routes, safe and easy access to towns and local sights, a network of suitable and easy- to-book cycle friendly accommodation options, coherent and visible route signing, improved arrangements for cycle carriage by public transport and a proper system for bike hire at public transport stations. Furthermore, fundamental factors are considered to be the development of a more cyclist-friendly culture within the tourism industry as well as a better coordinated and targeted marketing of cycle routes, cycle hire and cycling holidays. The strategy also contains



Figure 2: The four cycling route map in Preveza Prefecture
 Source: Vlastos, T. (scientific responsible), 2009. *Research on creating a cycling tourism planning strategy in Preveza Prefecture*

bicycle routes planning guidelines and some key promotional priorities for cycle tourism development in the Mediterranean.

The current tourism strategy involves a few coordinated initiatives (i.e. Eurovelo, local paths, etc.) and limited completed infrastructures (Bakogiannis et al. 2014). The three EUROVELO routes that run through Greece are 8, 11 and 13. Route 8 is called the Mediterranean Route running from Cádiz to Athens and Cyprus for a total of 5,888 km, Route 11 called the East Europe Route runs from the North Cape to Athens for a total of 5,984 km, and route 13 called the Iron Curtain Trail runs from the Barents Sea to the Black Sea for a total of 10,400 km.

Apart from EUROVELO and some other rather fragmented implementations (see Athanasopoulos, 2016), a promising 63 km bike trail network, called Attica Railtrail, has been studied in detail to run through the Athens Metropolitan Area reusing an abandoned rail line that was connecting the area of Agioi Anargiroi to the well-known places of Lavrio and the archaeological site of Sounio.

According to Bakogiannis et al. (2014), European and international experience of rail lines being converted into walking and cycling routes as part of tourist development schemes can promote contact with nature, exercise, culture and the rail-way

architecture (i.e. metal or wooden train bridges, tunnels, traditional stations-landmarks, etc.). Athens Metropolitan Area (AMA) being one of the most important territories in Greece, is providing a key prefecture for pilot railway transformation, aiming at reclaiming derelict open spaces such as the linear land of the rail line and the deserted station buildings and facilities around it. A principal attribute of this development directly affecting cycling urban mobility is related to the complementary local bicycle networks of the neighboring areas, which will use the Attica Railtrail as the backbone of their system. Similarly the proposed development of a bike sharing system, park and ride spaces and the systematic integration of the regenerated line in the tourism industry will boost bicycle usage and attract cyclist tourists.

A similarly coherent initiative in northwest Greece involves the development of four (4) cycling routes in Preveza Prefecture (Vlastos, 2009), passing by special landmarks and attraction sites in urban, agricultural, forest, mountainous and low vegetation landscapes. This programme has created an initial list of the nearby hotels and rooms to let, restaurants and health related facilities as well as specified the traffic volume, speed and existing slope of the paths to allow users to select what fits best to their needs and abilities.

This initiative is, further, critical to the evolution of cycling mobility in regional areas of Greece as the designated routes link urban centres and settlements with rural areas, cultural and leisure facilities as well as special landmarks.

3 Emerging cycling culture in greece and its potential impact on commuting travel patterns

Bike commuting in Greece is slowly being developed and a number of urban cycle networks have been created in several Greek cities. Sustainable mobility and the emergence of cycling, call for new types of infrastructure that are in a human scale and people- oriented. Already since 2007, EU funds are being redirected from typical road infrastructure and landscape upgrading to projects that meet the demands of pedestrians, cyclists and public transport users, increasing the importance of traffic safety and altering car-centric mobility patterns. The street is becoming a crucial public space (Jacobs, 1961; Sivam and Sadasivam, 2013), where everyone deserves their place and mutual respect is considered sine qua non. From activists to engineers, stakeholders and public officials, the bike is being recognized as a cleaner and cheaper alternative for short trips compared to the use of private cars. However the question remains. How can the principles, policies and infrastructure of cycle tourism in interurban environments and sustainable mobility benefit from each other?

Cycle tourism demands specific routes for leisure and tourism activities in their study areas which should be safe and readable, along with a number of complementary facilities to allow for quality vacations in cycle-friendly environments. Cycle routes can utilize existing rural street networks and often under-utilized or derelict resources or have dedicated cycle trails and paths connecting the various nodes. The typical

requirements and priorities regarding the infrastructure include backbone routes (i.e. traffic free and ideally circular routes), secondary cycle routes, coherent route signing, route maps and information points, as well as other integral elements of supporting the tourism activity (i.e. accommodation). These resources and evolved strategies have both short and long term impacts in the study areas and their surroundings in terms of accessibility enhancement, traffic management, adopting new information and marketing policies etc.

CYRONMED (2008) has identified some of the direct benefits of cycle tourism in cycling mobility for the developed areas:

- Cycle tourism offers opportunities for the development of cycle hire/ bike sharing systems that can be also used by locals
- Cycle tourism can help reduce excess traffic and improve traffic management
- Encouraging cycle tourism can help to encourage utility cycling: many people may rediscover cycling while on holiday or as a leisure activity, and may then be encouraged to cycle more frequently for other purposes.
- Encouraging cycle tourism can help to improve cycling provision for local people: the benefits of encouraging cycle tourism may provide an additional justification for investment in cycle provision.

Adding to the above, benefits can be gained regarding the overall public perception of cycling, as tourists interact with the environment, stay in places and spend money in local businesses. Cyclist tourists interact with the urban and rural environment as they pass through or stay and most importantly interact with the local stakeholders, engaging them in different lifestyles, new types of infrastructure and amenities that are adding to the public space a new type of user. These amenities can become the paradigm for small alterations in daily travel behavior and similar performance may occur within the locals and other visitors. Complementary cycling and pedestrian amenities for tourists can also improve cycling mobility and influence travel behavior as several fundamental elements of cycling are implemented in favor of the first such as:

- The enhancement or the setup of new bike parking facilities.
- The Enhancement of accessibility in public transportation stops and stations (bikes entering, parking or carried in trains, underground, buses etc.).
- The installation of bike sharing.
- Mobile technology in respect to mapping and navigation.
- Mobile technology in respect to information, awareness raising and promotion of cycling.

Commuting travel patterns that can be affected in the short term of new infrastructure and policy implementations mostly refer to low average commuting distances in both urban and regional environments. Travels conducted for leisure activities as well as short distance non-commute travels can be reconsidered in respect to the mode of transportation and bicycles can be integrated in daily or weekly patterns. A number of daily travel activities in small to medium enterprises as well as within workers in

tourist related positions, when given the proper motivation, can also be revised. In the long term, when cyclists have changed the overall public perception, benefits can be appraised in terms of better traffic management, alleviation of peak hour congestion, decrease in volumes and delays and many more. Investing in bike infrastructure, along with technology integration and a high quality marketing strategy has been proven to work efficiently in a number of cities in regards to the aims of sustainability and the rise of cycling tourism with an enhancement of its daily life, its integration and promotion.

Modern bike sharing systems implemented in Greece are slowly integrated in several cities, mostly in islands and small tourist cities in rural areas, enforcing the potential growth for cycling mobility and providing tourists the alternative of transportation means. Moreover, the various campaigns and private marketing strategies of cycling tourist destinations (i.e. Costa Navarino's bike festival, Cretan Sports Cycling etc.), cycle tourism packages and organized tours are strengthening the various individuals wanting to experience cycling holidays in a sustainable environment. Likewise complementary forms of alternative tourism, that are on the rise, such as ecotourism, cultural, activity, sports and adventure tourism, contribute to the overall acceptance of the different model in a country that was, for the last two decades, mostly investing in mass tourism.

4 Discussion –conclusions

This paper has shortly reviewed the key features and benefits of cycling tourism in socio- economic and transportation terms and its interactive contribution in cycling and subsequently walking mobility for sustainable development purposes. The common strategies, policies and actions have been briefly analyzed in the Greek environment along with a description of the few initiatives and limited completed infrastructure in the country. Two critical initiatives are being the core of a large scale discussion on cycling tourism destinations and needed strategies. Moreover, the argument on how emerging cycling culture in tourism can contribute in the change of public perception and finally alter daily commuting patterns in favor of the bicycle in the Greek car-centric cities, is explored. The most substantial issue is that encouraging cycle tourism can enhance cycling amenities for the local communities.

Promoting cycling tourism involves infrastructure building, marketing campaigns and promotional actions along with stakeholders' engagement, all of them integrated within an overall strategy for tourism that can allow the protection and thriving of landscapes and sensitive environments. Several countries in Europe and abroad have incorporated such actions achieving to welcome specialized markets within a secure and respectful set of activities. Access to such a planning framework can provide regional planning an initial and continuous support to integrate cycling in the daily transportation choices and thus improve quality of life in cities and peripheries.

Following steps include the quantification of benefits in pilot case studies and the recognition of the path through which authorities, agencies and local stakeholders will work collaboratively to achieve a prosperous cycling tourism development complying with the overall adjustments in the new sustainable mobility era. The upcoming funds allow and even prioritize cycling interventions, an opportunity that if handled efficiently, could upgrade the overall transportation sector in the country.

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