



SUSTAINABLE
ISLAND
MOBILITY
P L A N

SUSTAINABLE ISLAND MOBILITY PLAN

How to prepare a SIMP for a small or medium-sized Greek island

Imprint

About: The publication of this guide for the Greek islands has been partially funded by the European CIVITAS ELEVATE and CIVITAS MUSE projects of the Horizon Europe programme

Authors:

CIVINET Greece- Cyprus
(project coordinating body)

Kosmas Anagnostopoulos
*Transportation and Urban Planner MSc, Network Director,
Guide Coordinating Editor*

Christos Gioldasis
*Transportation Planner, PhD, researcher at the University of
Patras, Urban Transports project manager on behalf of Civinet*

Katerina Nikolopoulou
*Political Scientist, Head of Network Membership, CIVITAS
ELEVATE Activity Fund manager 2021-2022 on behalf of
Civinet*

Nikoleta Krousouloudi
Transportation and environmental engineer

University of the Aegean
Department of Environment / Laboratory of Local and Insular
Development (LLID)

Ioannis Spilanis
*Professor, Social and Humanistic Environmental Sciences
Sector*

Department of Shipping, Trade and Transport / Transportation
and Decision-Making Laboratory (TRANSDEM)

Amalia Polydoropoulou
Professor, Director of TRANSDEM

Ioanna Pagoni
*Assistant Professor, TRANSDEM Research Associate
Department of Tourism Economics and Management*

Acknowledgement: This publication is made possible thanks to the valuable contribution of all participants.

Proof reading: CIVINET Greece-Cyprus NPO

Layout: Sawas Stroumpas, CIVINET Greece-Cyprus NPO

Publication Date: May 2024

Disclaimer: The views expressed in this publication are the sole responsibility of the authors named and do not necessarily reflect the views of the European Commission.

Copyright: This publication is the copyright of CIVINET Greece-Cyprus NPO. All images and text elements in this publication, for which a source is provided, are the property of the organisations or individuals credited.

The authors would like to encourage the widespread use of these Guidelines. This document may be used free of charge, copied and redistributed via any medium, provided that (a) the source is acknowledged by using the citation above and (b) the use of the redistributed material is free of charge. Commercial use of this document as well as modifications to its content are authorised only with the express permission of the copyright holders.

It is noted that while drafting these guidelines, in February 2023, census data for 2021 were not available from ELSTAT. As a result, 2011 census data were used where necessary.

Abbreviations:

avg. - average

EETAA - Hellenic Agency for Local Development and Local Government

ELSTAT - Hellenic Statistical Authority

ELTIS - EU Urban Mobility Observatory

GDP - Gross Domestic Product

HELIEV - Hellenic Institute of Electric Vehicles

LLID - Laboratory of Local and Insular Development

MOU - Management Organisation Unit

PC - per capita

PRM - Persons with Reduced Mobility

RU - Regional Unit

SIMP - Sustainable Island Mobility Plan

SUMP - Sustainable Urban Mobility Plan

TRANSDM - Transportation and Decision-Making Laboratory

Contents

SECTION 1 - Introduction 10

SECTION 2 - Why Sustainable Island Mobility Plans (SIMP) 12

- 2.1 Why SUMPS need to be adapted and specialised for SIMPs 12
- 2.2 Unique features of Greek islands..... 15

SECTION 3 - The Greek islands in numbers 17

- 3.1 Population data 17
- 3.2 Economic data 21
- 3.3 Transport data 25
 - 3.3.1 Sea transport 25
 - 3.3.2 Air transport 29
 - 3.3.3 Road transport 30
 - 3.3.4 Soft mobility 32

SECTION 4 - What to consider when developing a SIMP 33

- Phase 1: Preparation and analysis 34
- Phase 2: Determine planning framework 44
- Phase 3: Measure planning 48

SECTION 5 - Good practices and innovative measures 55

- 5.1 Significant limitations on car use 55
 - 5.2 Alternating pedestrian routes, one-way streets and parking areas 57
 - 5.3 Showcasing historical footpath networks 58
 - 5.4 Development of cycle paths and services 59
 - 5.5 Modern zero-emission public transport 60
 - 5.6 On-demand public transport 61
 - 5.7 Mobility solutions for pedestrianised settlements with stairs 62
 - 5.8 Promoting electromobility 64
 - 5.9 Carpooling 66
 - 5.10 Sea transport around island perimeter 67
 - 5.11 Holidays combining boats and electric bicycles 68
 - 5.12 Mobility-as-a-Service (MaaS) 68
 - 5.13 Mobile phone applications 69
-

Contents

SECTION 6 - Noteworthy projects and studies on island mobility	71
---	-----------

SECTION 7 - References and data sources	77
--	-----------

List of Graphs

Graph 1: Population change 1981-2021 relative to vital statistics 2011-2021.....	18
Graph 2: Ratio of maximum seasonal population to permanent population.....	19
Graph 3: Total maximum population (seasonal and permanent) relative to land area (persons/km ²).....	20
Graph 4: Comparison of per capita GDP 2000-2019 between Greece and island prefectures (Greece=1).....	21
Graph 5: Distribution of turnover in productive sectors per RU (2019).....	25
Graph 6: Rate of employment in accommodation and catering by RU (2019).....	23
Graph 7: Percentage distribution of turnover in accommodation by quarter and RU (2022).....	24
Graph 8: Percentage distribution of turnover in catering by quarter and RU (2022).....	24
Graph 9a-c: Passengers arriving by coastal shipping lines (2019-2021).....	26-27
Graph 10a-c: Passengers travelling on cruise ships (2021).....	27-28
Graph 11: Trend in passenger traffic at the islands under review (2019-2023).....	29
Graph 12: Passenger arrivals at Greek airports during 2021.....	29
Graph 13: Traffic accidents and related victims (2021).....	30

List of images

Image 1: Panoramic view of the Hydra settlement.....	55
Image 2: The harbour and coastal road of the Symi settlement.....	56
Image 3: Main modes of mobility in the Spetses settlement.....	56
Image 4: Alternating pedestrianisation of Petrou Protopapadaki Street in Ermoupoli, Syros, allowing it to function as a commercial pedestrian zone during the day and as an exit thoroughfare from the controlled public parking area at 'Vaporía' in the evening.....	57
Image 5: The waterfront road and harbour of the Aegina settlement, which is converted in the evening to a pedestrian zone and parking area, respectively.....	57
Image 6: Map of Andros footpaths.....	58
Image 7: Special signpost marking Sifnos footpaths.....	58
Image 8: Bicycle touring by the CIVINET network in Aegina.....	59
Image 9: Group of tourists with bicycles on the island of Agistri.....	60
Image 10: Urban cycle paths in Kos.....	60
Image 11: The electric mini-bus in Rethymno, Crete.....	60
Image 12: The route followed by the electric mini-bus in Rethymno through the old city.....	61
Image 13: The electric mini-bus in Heraklion.....	61
Image 14: Electric and smart public transport systems on the island of Astypalaia.....	61
Image 15: The Santorini cable car.....	62
Images 16-20: Innovative solutions for settlements with stairs which have not yet been implemented on Greek islands.....	63
Image 21: Electric microcars on the island of Chalki.....	64
Image 22: Touring service of the Tinos sights using an electric Tuk Tuk.....	64
Image 23: Touring service for persons with disabilities through the old city and port of Rhodes with an electric wheelchair.....	65
Image 24: Electric municipal vehicle in Tilos.....	65
Image 25: Smart carpooling application.....	66
Image 26: Tour of Symi beaches by sea.....	67
Image 27: Small-scale cruise service with sailing boats and electric bicycles.....	68
Image 28: Mobility packages for visitors to Budapest.....	69
Image 29: Smartphone app for touring Aegina.....	70

List of Tables

Table 1: Population ranking based on 2021 census.....	17
Table 2: Capacity of operating marinas on the islands (2023).....	28

List of figures

Figure 1: Main differences in principles of design between SUMP and SIMPs.....	14
Figure 2: Electric vehicle charging stations on the islands.....	31
Figure 3: The nine steps of Sustainable Mobility Planning for the islands.....	33



Introduction

It has become almost certain that Sustainable Mobility Plans must be drawn up in European insular areas since the date the first guidelines for drafting Sustainable Urban Mobility Plans (SUMP) were released by ELTIS (2014), or perhaps even earlier. Such areas have always taken part in innovative European projects and many of them belong to European countries with a long tradition of planning for mobility.

The Sustainable Island Mobility Plans (SIMPs) – as a special adaptation of the SUMP methodology to island areas, and specifically Greek islands with permanent populations of fewer than 50000 residents¹ – were first named so in 2015 by the founder of the Department of Sustainable Mobility and Spatial Planning of the Network of Sustainable Greek Islands (DAFNI), Kosmas Anagnostopoulos. It was part of an effort to bring the Greek islands closer to the SUMP planning philosophy while also inducting the Greek islands into the European sustainable mobility ‘map’.

¹ The population limit was set according to the methodology for determining island typology developed in the ‘Atlas of European Islands’ and ‘EUROISLANDS’ projects by the University of the Aegean, under ESPON 2013.

At the very same time (early 2016), he also proposed to the Greek Ministry for Environment and Energy’s Green Fund the creation of a funding programme to draft SIMPs for the Greek islands. This was accepted for 32 islands (plus the municipalities of the islands of Crete and Evia) and was later expanded to include 162 Greek municipalities both on islands and the mainland. At the present time (Feb. 2024), more than 1/4 of these municipalities have an approved SUMP and one might say that the Greek islands were the reason for the broader development of the SUMP tool by local authorities.

Since then, the SIMP idea was presented at some of the more noteworthy international conferences on sustainable mobility (ECOMM 2017, CIVITAS Forum 2017, SUMP Conference 2018), it was promoted through articles on the topic (ELTIS, Kathimerini newspaper and others), and came to be accepted by the working group reviewing the European Guidelines for Developing SUMP, making a reference to it in the revised 2019 edition (p. 23).

The concept of SIMPs was put to the test by the group that developed it, i.e. the team that founded the Greek-language CIVITAS network for sustainable mobility, CIVINET Greece-Cyprus, in March 2018. This was achieved, on the one hand, by developing SIMPs for the islands of Kea, Sifnos, Kythnos and Naxos (though none of these has been completed so far due to insufficient funds), and on the other hand, by developing the SIMP methodology on other related projects, such as the crowdfunding campaign 'Folegandros Routes', the European project 'HiReach' (Horizon 2020) as developed in the Municipality of Naxos and the Small Cyclades and the 'Circular Tourism Strategy for the Islands of the Attica Region', as part of the European Interreg MED INCIRCLE programme.

Aside from the CIVINET Greece-Cyprus actions relative to this topic, other bodies, such as the Technical University of Crete and the University of the Aegean, developed similar activity for the Greek islands, which is presented in a special section of this guide. The similar activity for European islands was not indexed as part of this document, but will be undertaken as part of an expanded topic guide on SIMPs for the islands of Europe, together with the necessary methodological adjustments so that SIMPs can become a European tool the European Commission can adopt.

We must make special note that this first survey of mobility on Greek islands can only be considered preliminary and indicative, as the wealth of Greek islands is vast and requires a significant amount of time and a corresponding budget to allow us to claim that an exhaustive survey has been performed. The research team approached this guide as an introduction to the extremely specialised topic of insular mobility, mainly to make a start and to be able to base on it additional surveys within the Greek territory and at international locations. It was also deemed important to undertake this first research project so that it could be submitted as soon as possible to the Greek government and to the European Commission (DG MOVE) as a way of informing them of the particularities of the insular space and allow them to directly adapt their policies and funding programmes to the needs of the local island communities.

The drafting of this guide on the Greek islands in Greek was funded by the European CIVITAS Elevate project of the Horizon 2020 programme through the CIVINET Activity Fund 2021-2022. This guide would not have been completed without the important contribution of the University of the Aegean and specifically the Regional and Insular Development Laboratory and the Laboratory of Research on Transport and Decision-Making, to the staff of which we are very grateful. We also owe special thanks to Fred Dotter, the Coordinator of the CIVITAS Elevate project, for encouraging us to proceed with drafting this guide and for the approval of its funding, without which it could not have been accomplished. And lastly, a warm thanks to the members of the ELTIS SUMP expert group for hosting a discussion at the meeting of 24/6/2022, as well as the participants in the CIVITAS Summer Course (Rethymno, Crete, 18-21/7/2022), who embraced our work and contributed constructive suggestions and studies.

SECTION 2: Why Sustainable Island Mobility Plan (SIMP)

2.1 Why SUMP guidelines need to be adapted and specialised for SIMP

Anyone who has studied the ELTIS guidelines for developing SUMPs can understand from their title that this particular valuable tool for planning sustainable urban mobility cannot be directly applied to small and medium-sized islands, especially if they are tourism-oriented and lack some kind of urban centre.

Whoever focuses on the small and medium-sized islands of Greece² will also notice that the permanent population of the largest settlement on each island is smaller in size than once might have been described as 'urban' (10 000 inhabitants)³, with the exception of Kos, Salamina, Kefalonia, Syros and Kalymnos, which have a settlement with more than 10,000 permanent residents and thus do have some kind of urban centre⁴.

Therefore, a typical small or medium-sized Greek island has no urban area, but its seasonal population, both in terms of the largest settlement and in terms of the island as a whole, is often of an urban size, but without the urban infrastructure and mobility services. This means that a Sustainable 'Urban' Mobility Plan cannot be developed for an area without any urban features, though the development of some kind of 'Sustainable

Mobility Management Plan' seems essential, both during the winter and during the tourist season, for different reasons in each case⁵. What the majority of small and medium-sized inhabited Greek islands need, therefore, is a 'Sustainable Island Mobility Plan (SIMP)'.

Delving deeper into the subject of insularity, one finds that the small and medium-sized islands of Greece possess unique characteristics that distinguish them from other similar spatial entities, such as metropolitan conurbations, small and medium urban centres, city suburbs, lowland agricultural regions and mountain ranges. These are:

² Greece has a total of 233 islands, 108 of which are inhabited, while 101 have from 1 to 50,000 permanent residents.

³ According to ELSTAT, 'cities' are settlements with a permanent population of more than 10,000 residents, while those with a permanent population from 2,000 to 10,000 residents are considered 'towns' (https://en.wikipedia.org/wiki/List_of_cities_and_towns_in_Greece)

⁴ Rhodes, Lesbos, Chios, Corfu, Evia and Crete, with a total permanent population of more than 50,000 residents, do not fall within the scope of the SIMP; therefore, no further reference will be made to these islands in the context of this guide, other than to mention possible good practices that may be applicable to smaller islands.

⁵ During the summer, the main issue is managing tourist flows and all they entail (e.g. logistics), while during winter, the predominant issue on the islands is 'transport poverty'. References to transport poverty can be found in the HiReach project (<https://hireach-project.eu/content/greece>).

- 1 the small area, strictly delimited by the sea
- 2 isolation and regionality
- 3 marked seasonality⁶
- 4 low population density throughout the island
- 5 high-density ground coverage and random road network in island settlements
- 6 lack of road and railway connections with mainland Greece (with some exceptions, e.g. Lefkada)
- 7 transport autonomy in the interior of the island compared to nearest island municipalities⁷
- 8 lack of large-scale interior mobility infrastructure
- 9 the unique, but fragile natural environment and landscape and important cultural heritage
- 10 special conditions related to energy generation, transmission and storage
- 11 high cost of living combined with limited services provided (social welfare, health, culture, education, recreation, etc.)
- 12 ageing of the permanent population

⁶ The maximum seasonal population on the islands is 1.51-7.17 times greater than the permanent population, according to University of the Aegean estimates.

⁷ In the sense that the interior mobility of each island is not affected by what happens in the interior of other islands (not even those closest to it), in contrast to what happens with adjacent municipalities. On the contrary, the interior mobility of an island is very much influenced by flows it receives from mainland Greece and from other countries through its ports and airports.

Based on the above, it would seem that Greece's small and medium-sized islands not only need an adapted and specialised SUMP methodology to achieve an equivalent sustainable mobility management plan for their interior (a SIMP), but the requirements of such an undertaking are significantly greater than those of a SUMP for a small or medium-sized inland city or town. One must take into account the seasonality and the need for innovative and versatile planning with emphasis on light infrastructure and quickly implementable solutions that will bring maximum results for the lowest possible cost.⁸

An important aspect that differentiates SIMPs from SUMPs is also the fact that, aside from designing and offering solutions for two separate periods of the year (summer/tourist season and winter/non-tourist season), a SIMP must also focus on two large but different population groups: permanent residents and visitors (tourists and holiday homeowners). This does not only affect the process of analysis, i.e. collecting data, needs and desires, but also all the consultation and inclusive planning procedures that will have to provide equal opportunities for all stakeholders to be informed and to take a position on mobility-related issues.⁹

The following figure presents the main differences between SUMPs and SIMPs, which are the main reasons for the CIVINET team to develop the SIMP tool.

⁸ The slogan 'lighter, quicker, cheaper' by Eric Reynolds, though usually used to support placemaking techniques, in the case of islands takes on a broader significance and can be linked to both a development approach with a small environmental imprint, and to more substantive – and socially useful – technological innovation.

⁹ In developing SIMPs for the islands of Kea, Sifnos and Naxos, different questionnaires were distributed to residents and visitors, and were written in three different languages (Greek, English, French) for the latter group.

main differences between SUMPs & SIMPs





















City(SUMP)		Island(SIMP)
	METHODOLOGY	
car-free city	general vision	car-free tourism
urban-periurban satellite settlements	area	island-island complex -urban areas (wherever they are)
residents + tourists	population	residents + tourists
large scale and mixed use	requirements for infrastructure	light and flexible
numerous	entry gateway/ external links	flexible
	FOCUS	
between work and home 	travel	 entertainment
extensive use needs for permanent solutions 	car	 need for flexible solutions
need for large-scale, mass and rail transport 	public transport	 need for light, customized (on demand) and flexible mass transport
existing or feasible 	railway	 not feasible
not very important ports mainly in coastal cities 	coastal shipping	 very important and always present
recreation, not important 	walking in urban areas	 significant tourist activity always present
mainly within urban areas 	bicycle	 potential solutions outside network
always integrated into the national energy grid 	energy	 not always integrated
mainly residents 	participation	 residents + tourists
difficult, slow and costly development or innovative ideas 	innovation	 lighter, faster, cheaper development of innovative ideas

Figure 1: Main differences in principles of design between SUMPs and SIMPs

2.2 Unique features of Greek islands

The Greek islands are unique and different both from other areas of Greece and from one another. Anyone attempting to group or categorise them will quickly find that a unified typology cannot address all insularity-related issues at once and that careful study is necessary to create categories depending on the issue at hand.

By analysing some of the key elements of insularity to better understand the way in which these particularities arose, we might argue that the direct impacts of insularity are linked to the inherent-fixed characteristics of the islands:

- **Their geographic isolation**¹⁰, mainly due to the strict delimitation of their physical space by the sea and less so by their absolute distance from mainland Greece, means that arrivals on the islands take place at specific times and from limited gateways (1-4 ports and 0-1 airports) so that there is a need to perform a demanding transportation task in a minimal amount of time over roadways of limited capacity. It should be underscored that up until the 1970s, there were islands with no port facilities at all (disembarkation was made by small boats), while the smaller ferry boats of that period did not appear until the following decade.
- **The small size of the islands**, combined with the spatial limitations imposed by the sensitive and precious natural environment, the unique landscape and important cultural heritage offer limited available space for transport infrastructure and prevent underground or above-ground large-scale construction projects. The accessibility of settlements and other poles of attraction on the islands is influenced by the relief of the terrain and the manner in which they were built (defensive

positions-castles), but also the locations where port facilities were built, either at the harbour of the main settlement in the island's interior to protect it from raids, or at the centre of a fortified seaside centre.

- **The small permanent population**, low population densities¹¹ and limited needs for daily travel (due to the simpler rural life dominant on the islands until recently, and still existing to this day) meant that mass transport systems (urban and intercity) were not developed in the past, while many of the islands still do not have any public transport during the winter months. Besides, travel within islands until the middle of last century was on foot or on animals over a network of trails, as the road network and land transport with motor vehicles were developed much later, coming as a result of the technological advancement of coastal shipping and construction of more suitable port facilities.
- **The traditional method for developing island settlements**, which in many cases did not even provide for the passage of carts, resulted in many of these settlements now being mostly or fully pedestrianised.

The indirect impacts of insularity are secondary results of its effects based on the broader economic, social, technological and political environment, policies that were implemented but also those that were not. Based on the above, islands in places with a high degree of autonomy in many types of food and production centres/exports and trade, hubs in a system of short and medium distance sea transport, after undergoing a critical period of shrinking populations and production, eventually became centres for seasonal recreation and

¹⁰ For many island settlements, the isolation was 'double', since they are a great distance away, with no public transport connection and/or without a paved road network). On very large islands, which are not within the scope of this guide, one can identify settlements or areas with triple or even quadruple isolation (see coastal settlements of the Municipality of Sfakia in Crete and the poles of tourist attraction between them). Related references to the phenomenon of 'double isolation' can be found in the HiReach project ([https:// hireach-project.eu/content/greece](https://hireach-project.eu/content/greece)).

¹¹ It has been calculated that the average population density for all Greek municipalities (1,360.5 residents/km²) is approximately 23 times greater than the average population density for island municipalities (60.4 residents/km²), based on available ELSTAT figures from the 2011 population census. Additionally, the maximum population density for a Greek municipality (21,385.7 residents/km²) is about 52 times greater than the maximum population density of an island municipality (413.5 residents/km²).

high imports. This has marked impacts, such as:

- **Particularly high reliance on tourism** which entails an increase in but mainly diversification of needs.

The driving force of island economies is tourism, which altered the needs for transportation projects, but mainly the type of transport modes, from fishing boats that transferred goods onto animals to ferry boats carrying lorries or an increasing number of tractor trailers which were often disproportionately large relative to the island's infrastructure and capacity.

The development of tourism and second holiday homes dramatically increased construction within, around and mainly outside settlements, along with the need to travel to remote beaches and other locations of tourist interest. This fact, combined with the diminishing/abandonment of local production of farm products and other products for own-consumption (this had already occurred due to the low productivity of islands compared to the lowland areas and cities) led to a need for increased imports of goods and construction materials. As a result, public and private means of transporting commercial goods increased in number and size, creating multiple traffic problems, while open spaces that could be used for parking are continually decreasing.

- **High seasonality:** The increase in number of visitors and high seasonality (at quite a few islands, the tourist season is just 45 days) does not permit the development of conventional mass transport that can simultaneously meet summertime needs and be economically viable during the off-season. This results in a sharp increase in passenger cars and motorcycles, either private (transported by ferry) or rentals.

SECTION 3: The Greek islands in numbers

3.1 Population data

Greece has 108 inhabited islands (based on the 2011 census); of these, 77 have an administrative entity (municipality or municipal district) for which transportation-related data are available¹². For the most part, the Greek islands belong to regions comprising islands only (North and South Aegean, Ionian, Crete), while fewer are part of the mainland regions, with most of them belonging to the regions of Attica and Thessaly.

The greater percentage of islands are considered 'small' from a population aspect (64% have fewer than 2,000 permanent residents), while a significant number could be described as medium-sized in terms of population (30% have between 2,000 and 50,000 residents). Only 6% of the Greek islands have a population greater than 50,000 residents, and as such are not within the scope of this document. (see Table 1)

Table 1: Population ranking based on 2021 census

Population (residents)	Number of islands	%
100-1,999	37	47%
2,000-9,999	22	28%
10,000-49,999	15	19%
>50,000	5	6%
Total	79	100%

Source: ELSTAT, processed by CIVINET

¹² These do not include Crete or Evia.

During the period 1981-2011, the majority of islands recorded an increase in population, without managing to make up for the drop of the previous 30 years (1951-1981). Meanwhile, during the decade 2011-2019, most islands saw a negative change in vital statistics, often greater than that for the whole of the country (-2.6%).

The impact of tourism is decisive in the pressure brought to bear on Greek islands, a fact which translates into corresponding pressure for increased transport works; this is reflected on two levels:

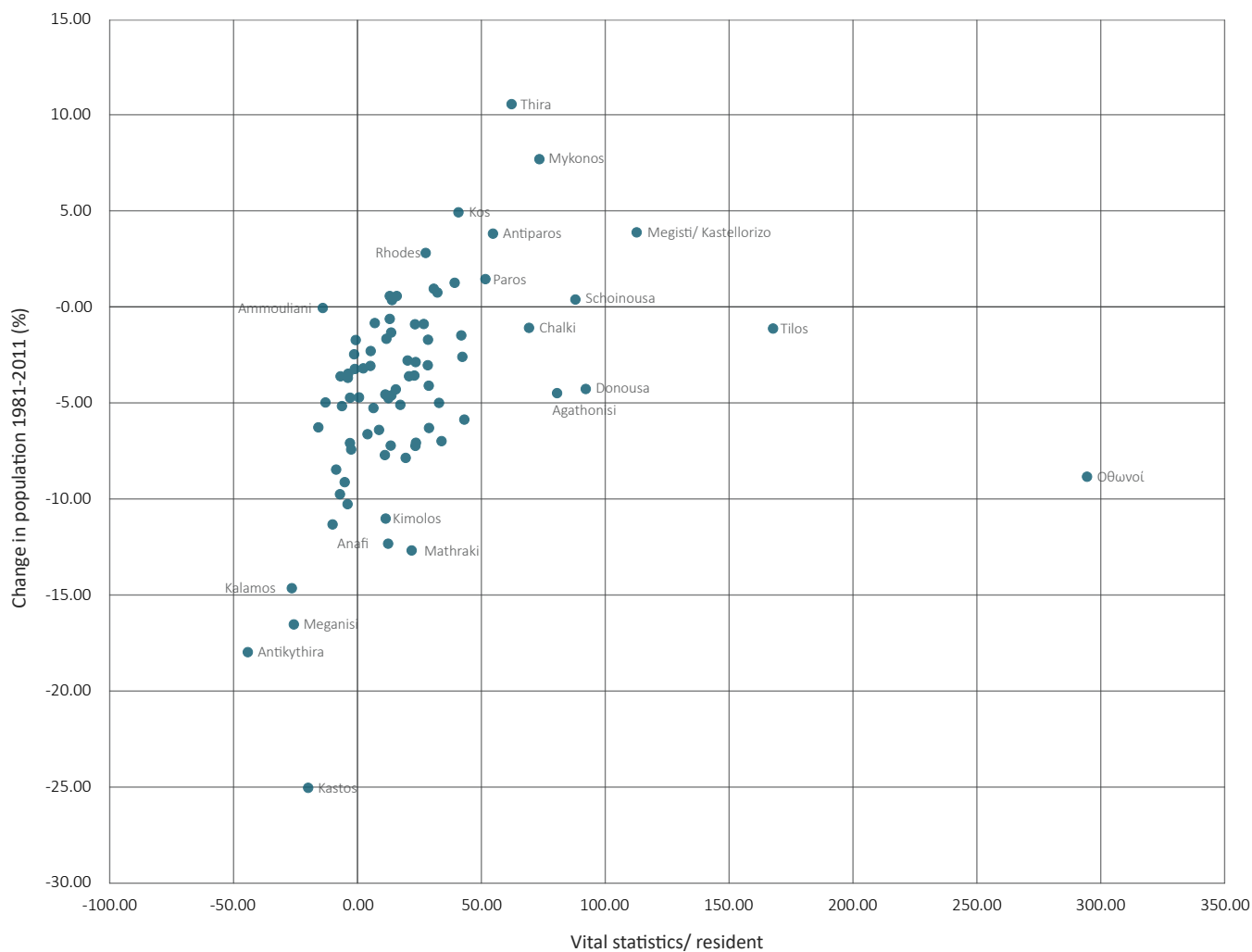
- in the ratio between maximum seasonal¹³ and permanent population. Based on the data in Graph 2, most islands see an exponential growth in population during peak tourist season, with one extreme example being Serifos, where the seasonal population is 7.12 times greater than its permanent one. Few islands can say their total tourist beds are fewer than their permanent population.
- in the ratio between maximum seasonal population and land area. As Graph 3 shows, two islands exceed a density of 1,000 residents/km²: Santorini and Salamina. Both islands have a high-density permanent population given the fact they are islands (205.2 and 413.5, respectively), but Santorini has twice the number of tourist beds compared to private beds, while Salamina has almost exclusively private beds. They are followed

¹³ The maximum seasonal population is expressed as the sum of permanent residents with the total number of available tourist beds, as 100% occupancy on a Greek island is, firstly, the most unfavourable situation from a tourist pressure standpoint, and secondly, this is the case on almost all islands during August. The number of available tourist beds includes beds in hotels, rented rooms and flats, tourist homes and camp sites, and privately owned, empty or holiday homes, whether these are used by their owners on holiday or rented on a long- or short-term basis (Airbnb). A conservative assumption is that every holiday or empty residence has at least 3 tourist beds.

SECTION 3 - THE GREEK ISLANDS IN NUMBERS

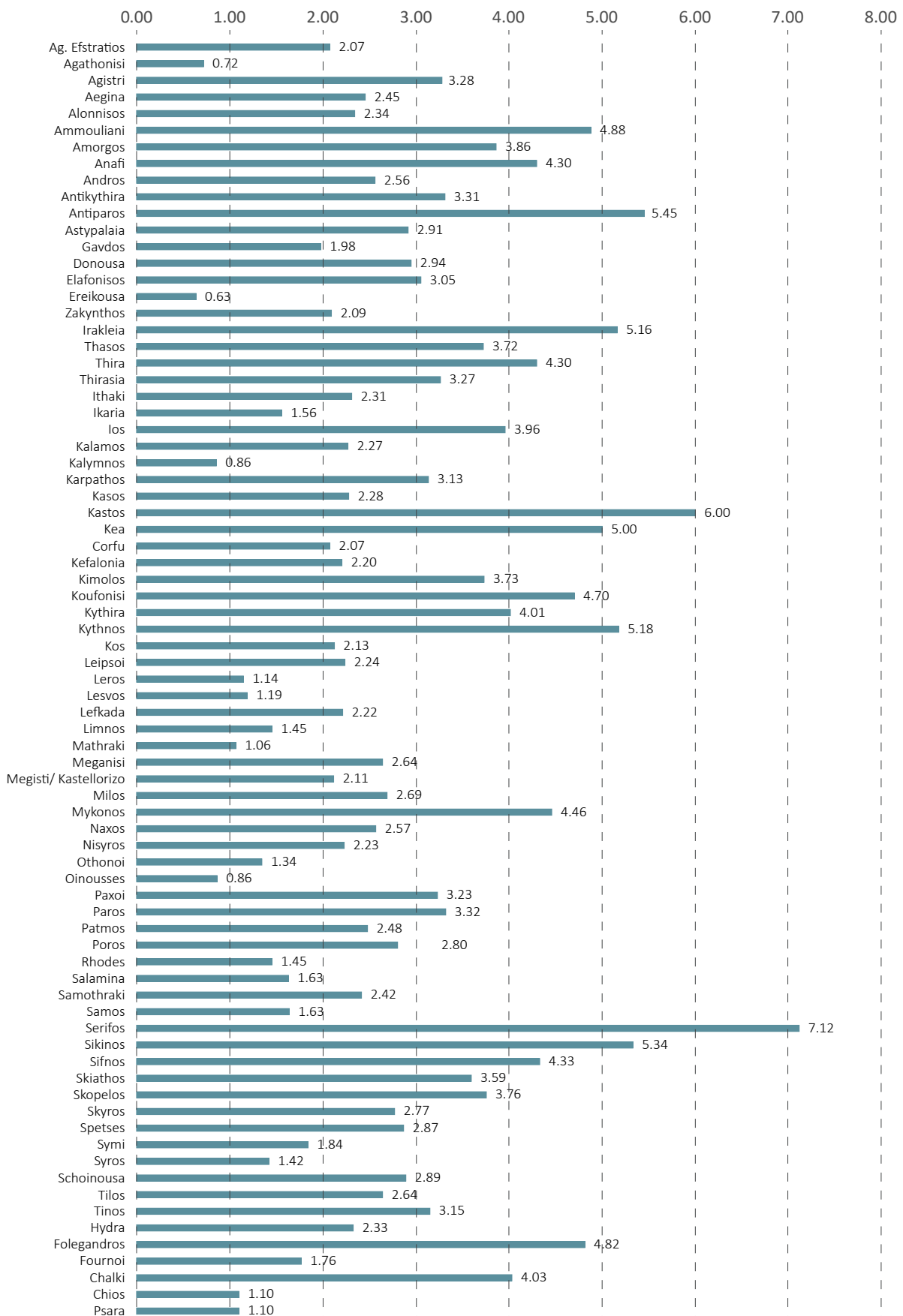
with a significant difference but with substantial pressure by Mykonos (683.17), Spetses (652.27) and Syros (611.28), the first mainly with tourist accommodation and the other two with private accommodation. The steep increase in population density during summer months has a positive aspect as well, in that the operation of a public transport system would be both feasible and viable (practically self-supporting).

Graph 1: Population change 1981-2021 relative to vital statistics 2011-2021

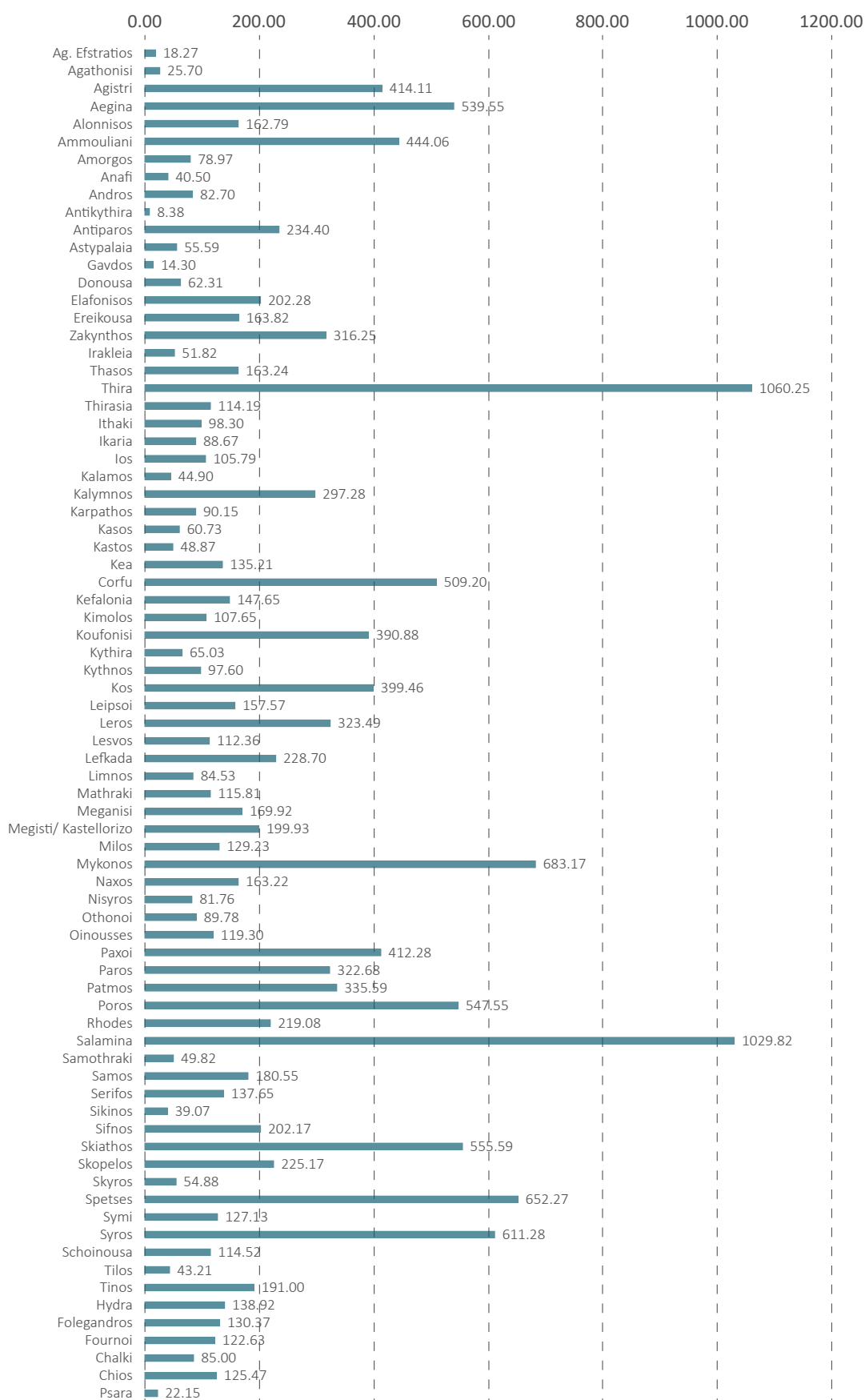


Source: ELSTAT, processed by the Laboratory of Local and Insular Development

Graph 2: Ratio of maximum seasonal population to permanent population



Source: ELSTAT 2011 census, with population reduced to the year 2019 for which the most recent record of beds is available; processed by the Laboratory of Local and Insular Development

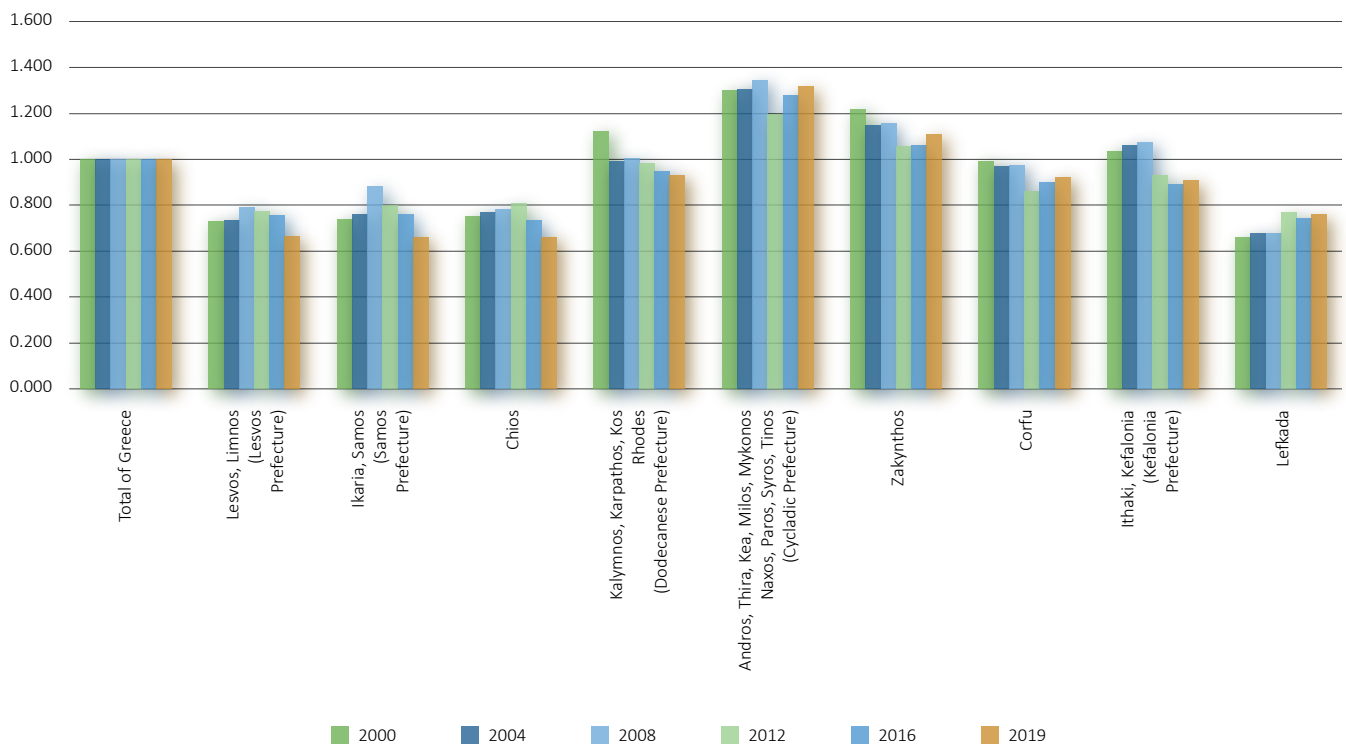
Graph 3: Ratio of total maximum population (seasonal and permanent) to land area (persons/km²)

Source: ELSTAT 2011 census, with population reduced to the year 2019 for which the most recent record of beds is available; processed by the Laboratory of Local and Insular Development

3.2 Economic data

Differences between the islands are documented with regard to the course of the per capita GDP, with the Cyclades being above the national average for 2020 and the Dodecanese, Corfu, Zakynthos and Kefalonia Prefecture just slightly under¹⁴ (Graph 4).

Graph 4: Comparison of per capita GDP 2000-2019 between Greece and island prefectures (Greece=1)



Source: ELSTAT, processed by the Laboratory of Local and Insular Development

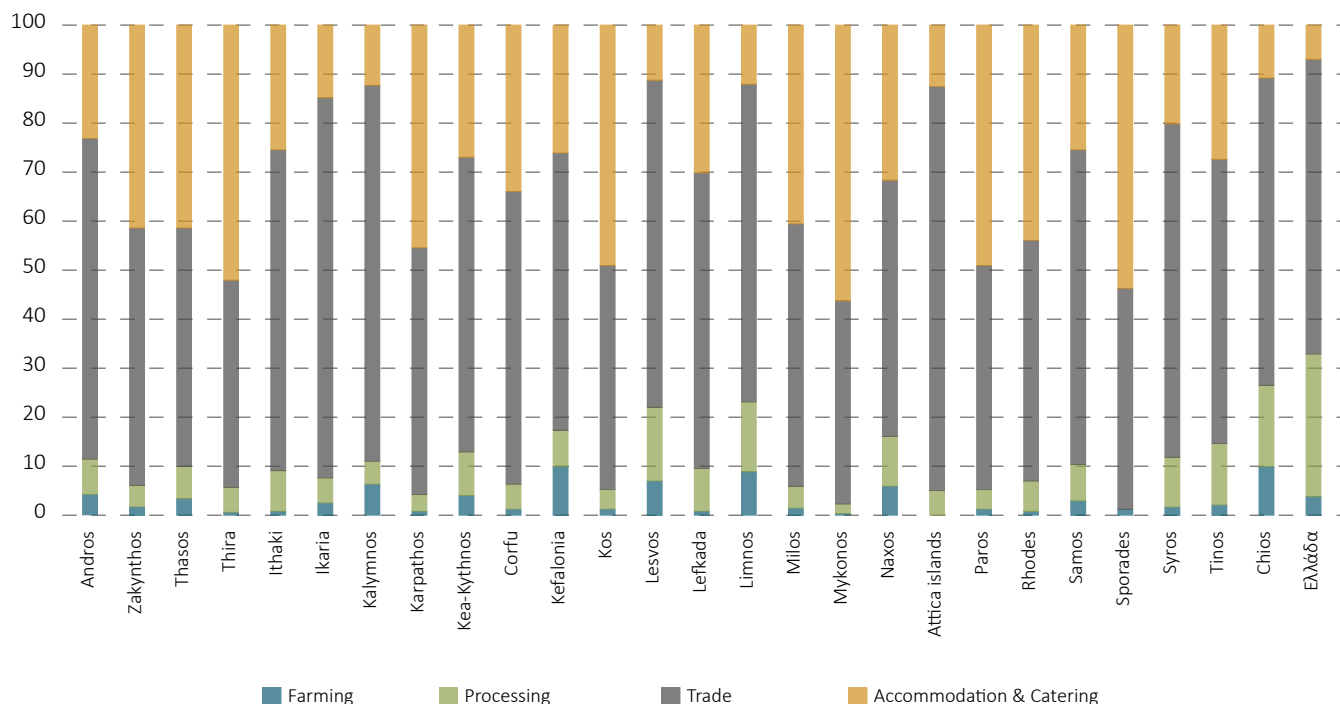
The last available data are from 2020, but because of the Covid-19 pandemic and travel restrictions in place, data from 2019 were used in the following two graphs. With regard to the weight of the main private economic sectors, we found that commerce registers the highest proportion in the majority of Regional Units (RUs), whereas in just 5 RUs, the most tourism-oriented (Thira, Mykonos, Kos, Paros and the Sporades), the accommodation and catering sector has a higher turnover (Graph 5). It is worth noting that in all RUs, the rate of turnover originating from this sector is up to 10

times greater than the average for the country (4.5%), such as in the case of Mykonos.

On the other hand, where processing is concerned, most RUs lag behind the country's average (19.3%) to a great extent, with the Mykonos RU registering the lowest rate (1.6%) and the Lesvos RU the highest (12.4%). With regard to the agricultural sector, the Thira RU registers the lowest output (0.6%), with the Limnos and Chios RUs having the highest (7.4% and 7.9% respectively), while the average for the country is 2.5%.

¹⁴ GDP data are only available at the level of former prefectures. Conversely, data for enterprises are available at the Regional Unit (RU) level.

Graph 5: Distribution of turnover in productive sectors per RU (2019)



Source: ELSTAT, Business Register, processed by the Laboratory of Local and Insular Development

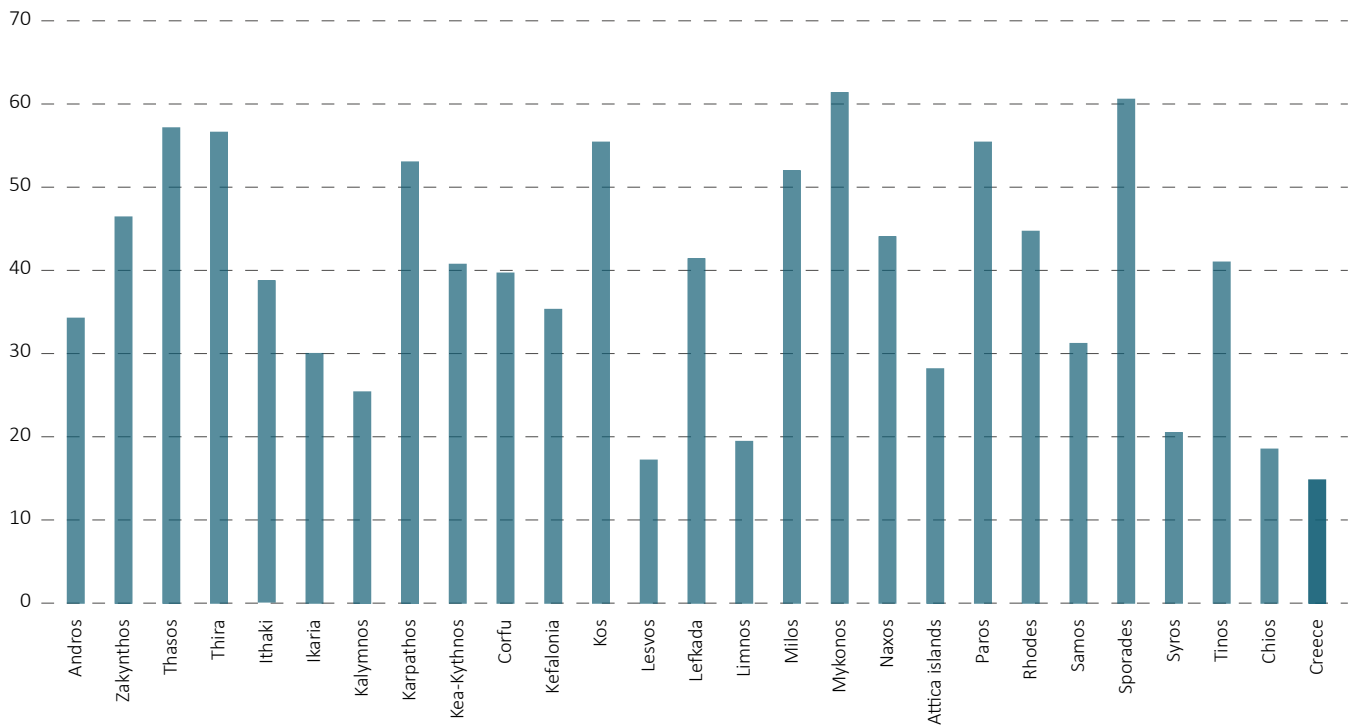
We should emphasise that this difference in the insular productive structure relative to the rest of the country is a critical factor that affects all parameters, including mobility.

With regard to employment, the picture is crystal clear. On both a national and regional level, the increase in employment during the period 2011-2019 was significant, i.e. 38.4% country-wide. The increase was mainly due to the accommodation and catering sector, which increased employment by 83.3% and became the second-largest economic sector in the country. Meanwhile, all other sectors important to employment (trade, processing, public sector, agricultural sector) declined. This development is brought out in great relief on the islands, where employment in the specific sector grows exponentially in most RUs, even in those which did not show in an increase in turnover, such as the

Rhodes RU. In the extreme example of Mykonos, the number of employees in this sector is nearly the same as that of the island's permanent residents, which is indicative of the high number of seasonably employed, non-permanent residents (see Graph 6).

We should note that the rate of employees in accommodation and catering enterprises in all island RUs is higher than the country's average (14.8%). The Mykonos RU with 61.4%, the Sporades RU with 60.6%, the Thasos RU with 57.2% and the Thira RU with 56.7% have the highest rates, reflecting a total reliance on these sectors, while the Lesvos RU with 17.2%, the Chios RU with 18.5%, the Limnos RU with 19.4% and the Syros RU with 20.5% have the lowest rates.

Graph 6: Rate of employment in accommodation and catering by RU (2019).



Source: ELSTAT, Business Register, processed by the Laboratory of Local and Insular Development

Given that it is now largely reliant on the tourism industry, insular economic activity is significantly strengthened during half the year (April-October) or during a smaller period, depending on the nature of the island and the shipping and airline connections available.

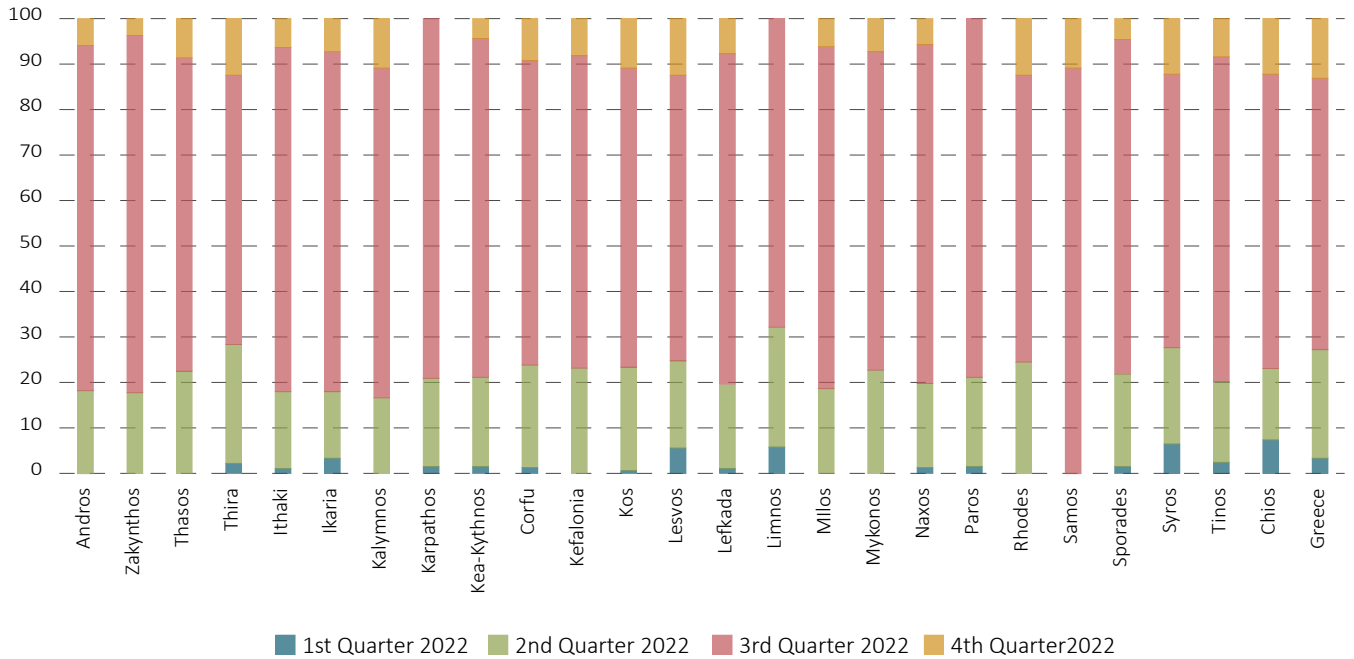
As evidenced by the turnover figures for accommodation enterprises, and catering secondly, by RU, while in the country overall accommodation realises 59.64% of its turnover during the period July-August-September, on the islands that amount is 71.64% during the same period. The largest rate is noted in Samos, where turnover during July-September is 89.23% of total turnover.

There are RUs that earn more than 70% of their turnover during the same period (e.g. Thasos, Sporades, Lefkada, Ikaria, Tinos, Andros, Karpathos, etc.), though they

essentially have a three-month tourist season. Santorini is at the other end of the spectrum, where it earns 59.29% of its turnover during that period but has a high tourist season for 6 months, in which it earns 85.46% overall; Rhodes is at 63.16% and 87.56%, respectively. Islands with limited tourism, such as Limnos and Lesvos, seem to have better distribution throughout the period (see Graph 7).

SECTION 3 - THE GREEK ISLANDS IN NUMBERS

Graph 7: Percentage distribution of turnover in accommodation by quarter and RU (2022).

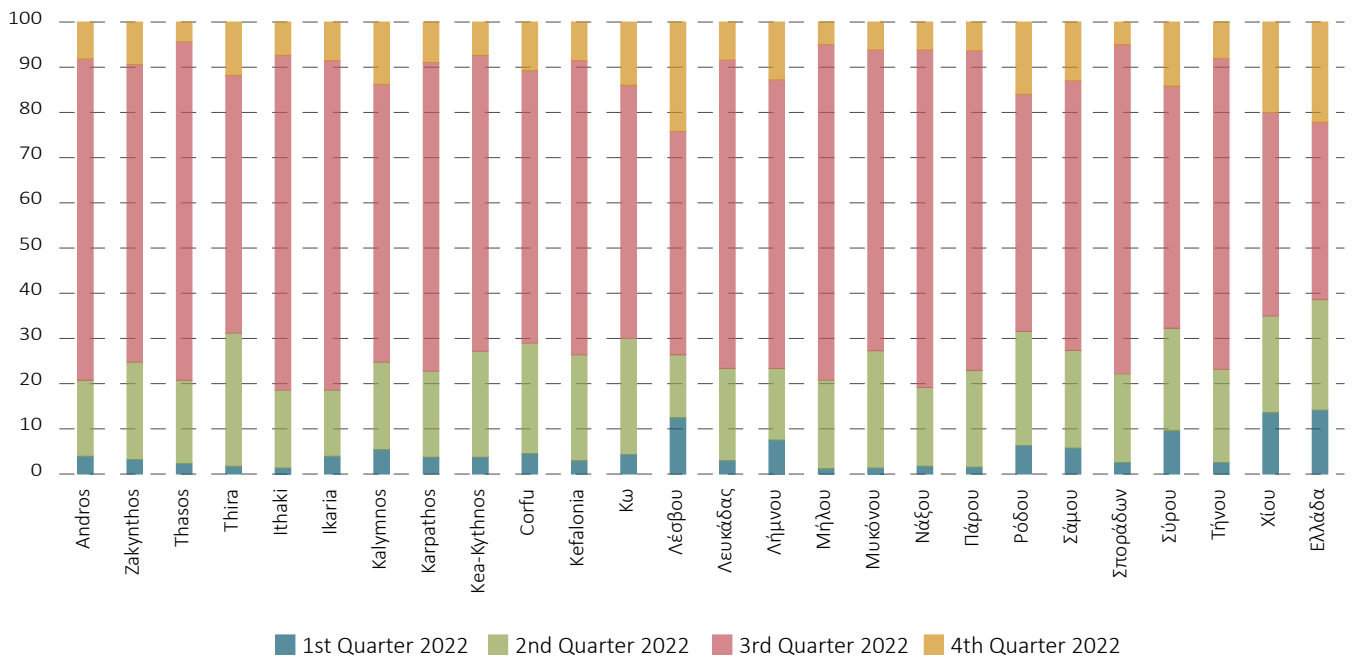


Source: ELSTAT, Business Register, processed by the Regional and Insular Development Laboratory

As regards catering establishments, the deviation between the total for the country and the islands is even greater. For the country as a whole, just 39.1% of turnover is earned in the July-September quarter, while at the other end, the Milos, Thasos, Paros, Ithaki, Ikaria, Sporades and Andros RUs take in more than 70% of their annual turnover during the period. It is a well-

known fact that very few catering establishments are open on these islands during the winter months. The less tourism-oriented islands of Chios and Lesvos show a different picture in this sector, along with islands with a sizeable permanent population, such as Rhodes and Syros, where catering remains at a high level throughout the year.

Graph 8: Percentage distribution of turnover in catering by quarter and RU (2022).



Source: ELSTAT, Business Register, processed by the Laboratory of Local and Insular Development

3.3 Transport data

Transport plays a decisive role in island development, as, on one hand, it connects islands to the rest of the country (insular and mainland) and, on the other, it facilitates intra-island mobility. Therefore, the role of transport is expanded along two aspects of the insular context:

a) Entry/exit gateways to/from the islands with airport and seaport infrastructure being the sole points of entry into the islands and serving their connection to the rest of insular and mainland Greece to ensure the flow of essential goods and facilitating travel by residents and tourists.

b) Intra-island mobility, with road transport being the sole contributor to the development and vitality of island communities. Firstly, it serves the need to connect individual settlements and allow residents to access opportunities for employment, education, healthcare and cultural resources. Secondly, it allows visitors to access points of interest on the islands, which in turn stimulates tourism, which is the cornerstone of many island economies.

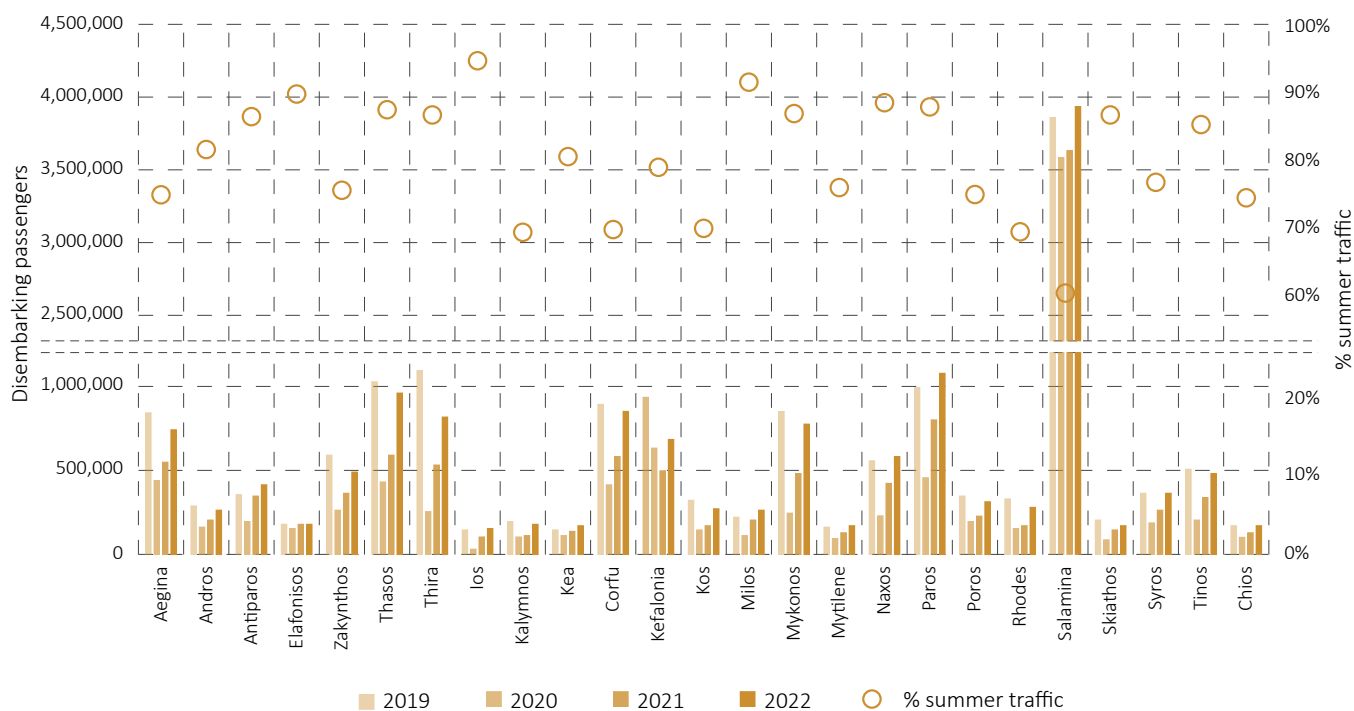
Particularly on smaller islands, the importance of seaports is highly significant, as in the absence of airport facilities, coastal shipping is exclusively tasked with the role of transporting people and goods. This section aims to delve more deeply into the multifaceted ecosystem of insular mobility, analysing the available modes of transport and providing a look at the current status of transport in the Greek insular territory.

3.3.1 Sea transport

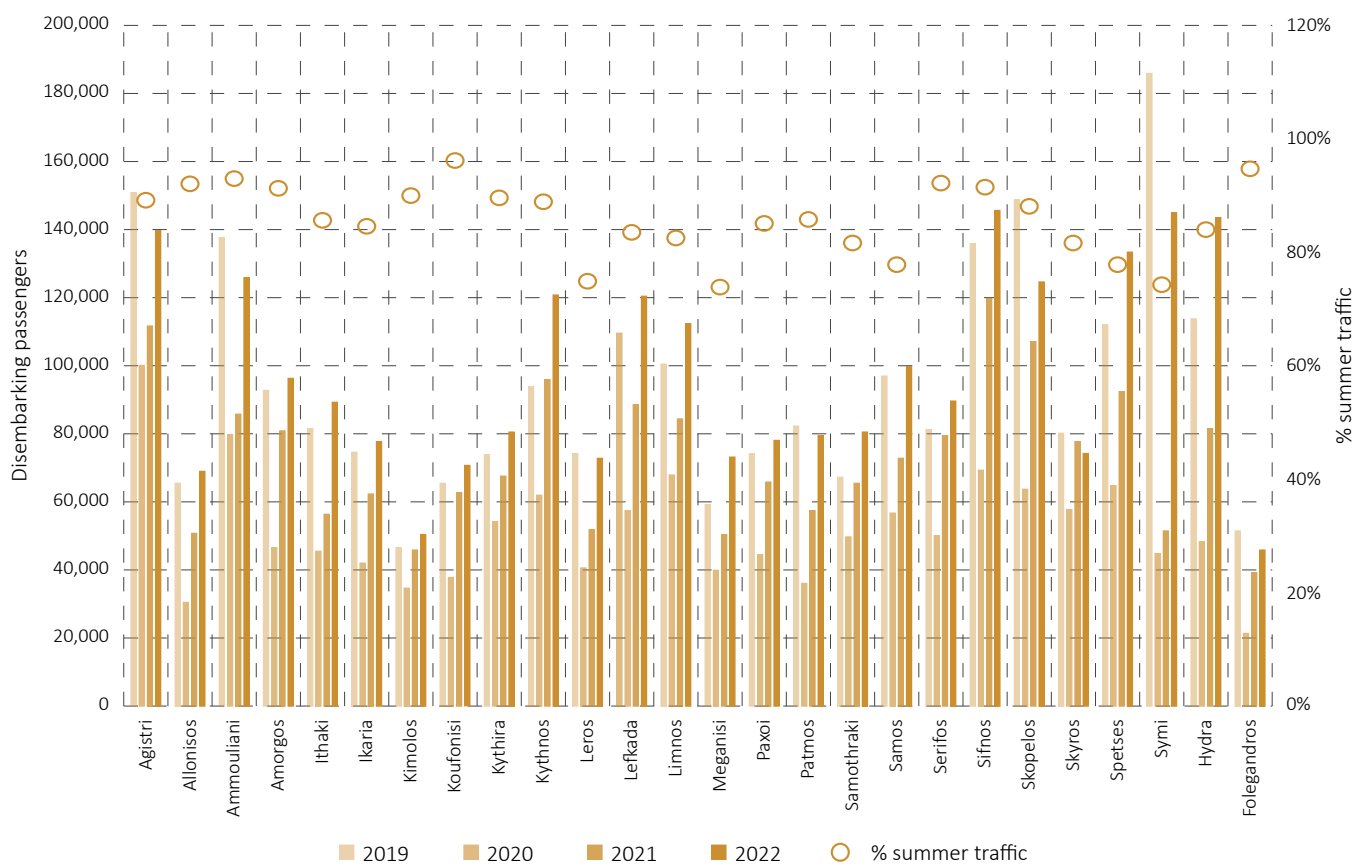
As regards sea transport, the system of shipping connections functions as an intensely hierarchical system centred on the port of Piraeus, with radiating connections to the islands. In Greece, there are 106 ports at all of the islands under analysis which are considered main ports, and which serve both permanent residents and tourist traffic mainly during the summer months. As indicated by recent statistical data, the Greek islands in 2019 welcomed more than 18 million passengers by sea, while in 2020 the disembarking passengers were noticeably fewer at 9.75 million, mainly due to the Covid-19 pandemic and the restrictions put in place to address it. Data for 2021 show a significant recovery in coastal shipping, with 12.9 million disembarking passengers. The graph below presents coastal shipping at the islands under review (in disembarking passengers) for the years 2019 to 2021.

SECTION 3 - THE GREEK ISLANDS IN NUMBERS

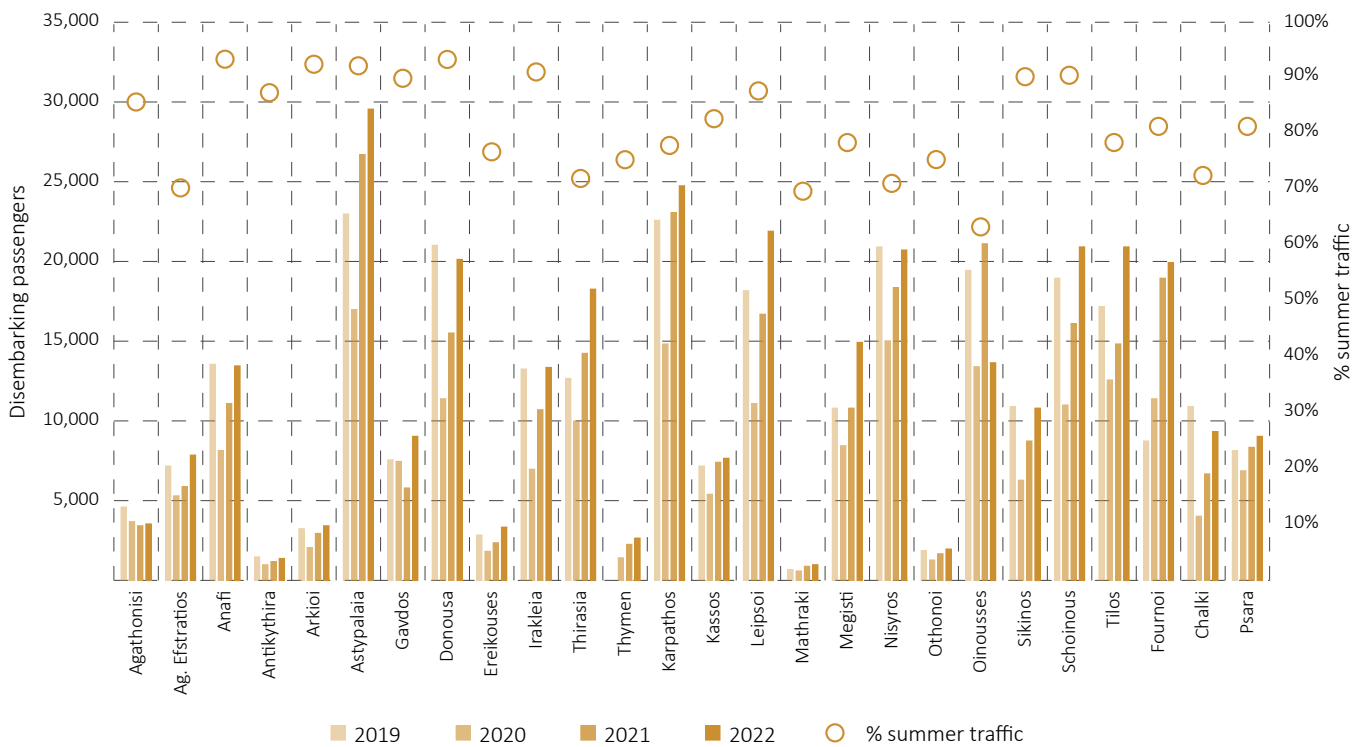
Graph 9a: Disembarking passengers by coastal shipping lines (2019-2021)



Graph 9b: Disembarking passengers by coastal shipping lines (2019-2022)



Graph 9c: Disembarking passengers by coastal shipping lines (2019-2022)

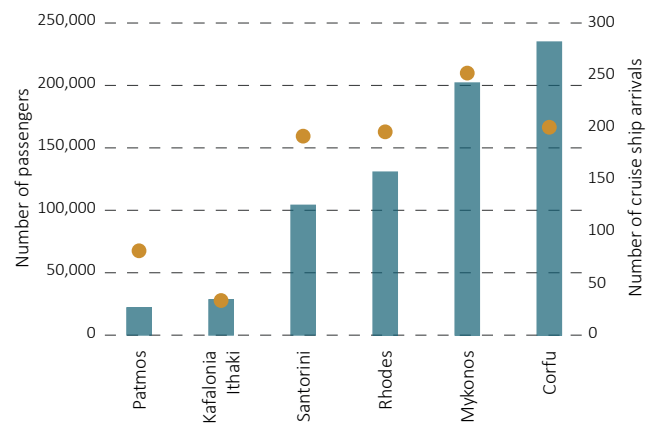


Source: ELSTAT, processed by the Transportation and Decision-Making Laboratory

The above graph shows that the majority of islands present the phenomenon of seasonality to a significant degree. Specifically, ship arrivals during the summer period (April through September)¹⁵ came to an average of 81.9% for 2022. Naturally, there are islands where this rate is closer to or exceeds 95% in annual arrivals, such as Koufonisi and Folegandros. At other islands, this rate is lower (59-65%), either because shipping traffic is significant throughout the year (Salamina) or because they do not have high passenger traffic in the summer either (Mathraki, Thymena).

Besides the shipping connections, some of the island ports also welcome cruise ships, which serve a significant number of visitors during the summer months. As shown in Graph 10a, Santorini, Mykonos, Corfu, Rhodes, Kefalonia and Patmos have the highest cruise ship passenger numbers.

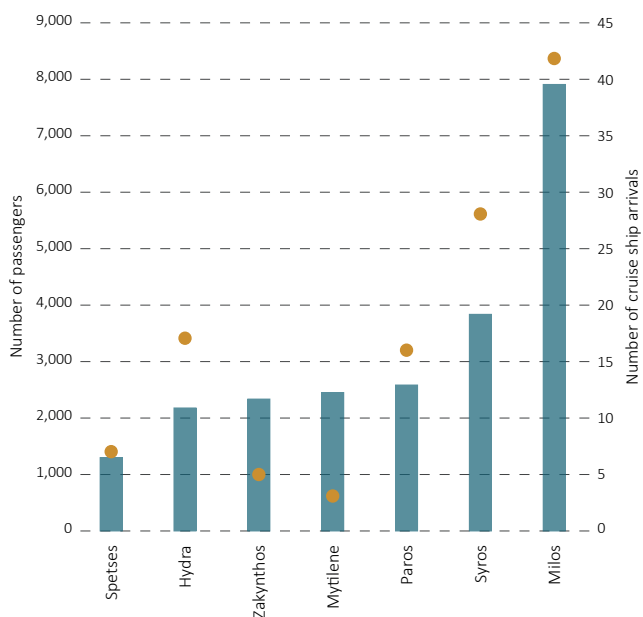
Graph 10a: Passengers travelling on cruise ships (2021)



¹⁵ Given the availability of quarterly data for disembarking passengers, the tourist season in Graphs 9a, b and c is set as the period from April through September.

SECTION 3 - THE GREEK ISLANDS IN NUMBERS

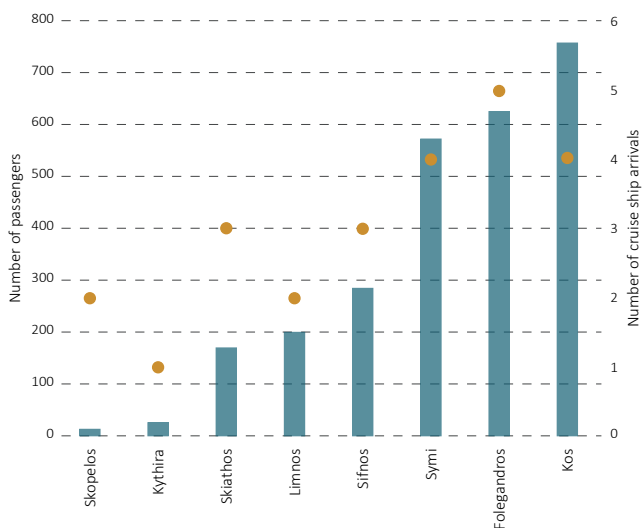
Graph 10b: Passengers travelling on cruise ships (2021)



Lastly, the port basins at many ports accommodate sailing boats, pleasure craft and fishing boats. There are currently 18 marinas located at the islands under review with more than 5,300 berths in total (see Table 2). A large percentage of these marinas are operational and are located in the general area of the island’s main port, while others are located outside the main port. In addition, some (e.g. Thasos, Chios) do not operate as marinas, but as sections the broader port for mooring fishing boats and tourist vessels. Lastly, some are up for tender.

Overall, all of the above contribute to creating traffic congestion in the area around the ports, particularly during the summer and at the times of ship arrivals and departures.

Graph 10c: Passengers travelling on cruise ships (2021)



Source: Hellenic Ports Association, processed by the Transportation and Decision-Making Laboratory

Table 2: Capacity of operating marinas on the islands (2023)

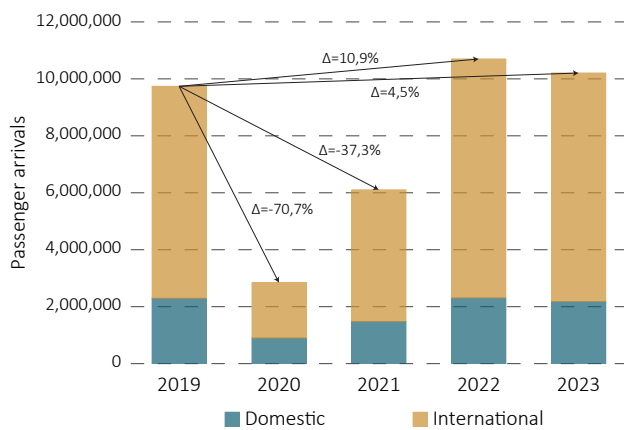
Islands	Berths
Zakynthos	150
Thasos	280
Ikaria	250
Corfu (Gouvia)	1200
Corfu (in port)	98
Kefalonia	174
Kos	265
Leros (Laki)	220
Lesvos	222
Lefkada	620
Rhodes (Mandraki)	175
Rhodes (Sfageia)	540
Samos (Pythagorio)	280
Skiathos	405
Skyros (Linaria)	17
Symi	58
Syros	167
Chios	180

Source: Greek Marinas Association, processed by the Transportation and Decision-Making Laboratory

3.3.2 Air transport

As regards air transport, there are 25 airports on the islands under review which largely serve domestic flights; 15 of these also cater to international flights. As in coastal shipping, the air transport sector in Greece was adversely affected in 2020 by the Covid-19 pandemic. As shown in Graph 11, arrivals in 2020 were 70.7% fewer than in 2019. In 2021, the sector managed to make up part of the lost ground with a difference of 37.3% from 2019, while in 2022 and 2023, it managed to fully recoup the number of passenger arrivals at the airports in question.

Graph 11: Trend in passenger traffic at the islands under review (2019-2023)

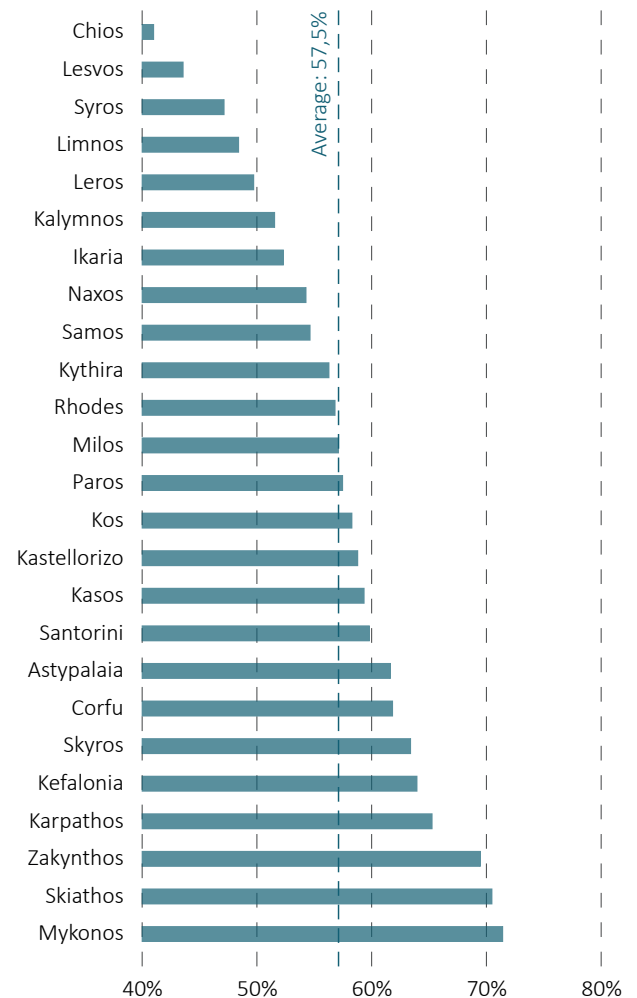


Source: Hellenic Civil Aviation Authority, processed by the Transportation and Decision-Making Laboratory

As in the case of sea transport, air transport is marked by intense seasonality with increased traffic during the summer months. It is worth noting that just in the three months of the summer season (June-August), the airports on Greek islands serve an average of 57.5% of arrivals for the entire year. Typical examples are Mykonos, Skiathos and Zakynthos, with about 70%. There are airports with lower rates of seasonality which nevertheless see more than 40% of their annual traffic during the three summer months (such as Chios with 40.9% and Lesvos with 43.5%), as shown in Graph 12.

Seaplanes are another mode of transport that could strengthen the connection between islands, and between islands and the mainland. In the past, there have been attempts at introducing seaplanes into the Greek island transport chain. It is also indicative that

Graph 12: Passenger arrivals at Greek airports during 2021



Source: Hellenic Civil Aviation Authority, processed by the Transportation and Decision-Making Laboratory

the main strategy in the Regional Spatial Planning Frameworks¹⁶ includes, amongst other things, adding seaplanes as a new mode of transport with regional and interregional scope with placement of water airports on Greek islands. Specifically, the Regional Spatial Planning Framework for the North Aegean, among others, includes a proposal for bolstering seaplane service and creating independent regional seaplane-based air transport networks. So far, the fully permitted water airports in Greece are in Corfu and Paxoi, while the permitting process is in the preliminary stages for several other islands in Greece (Skyros, Alonnisos, Skopelos, Patmos, Tinos, Chios, Sifnos, Othonoi, Ereikousa, Mathraki, Psara and Oinousses).

¹⁶ <https://ypen.gov.gr/chorikos-schediasmos/chorotaxia/ethniki-politiki/>

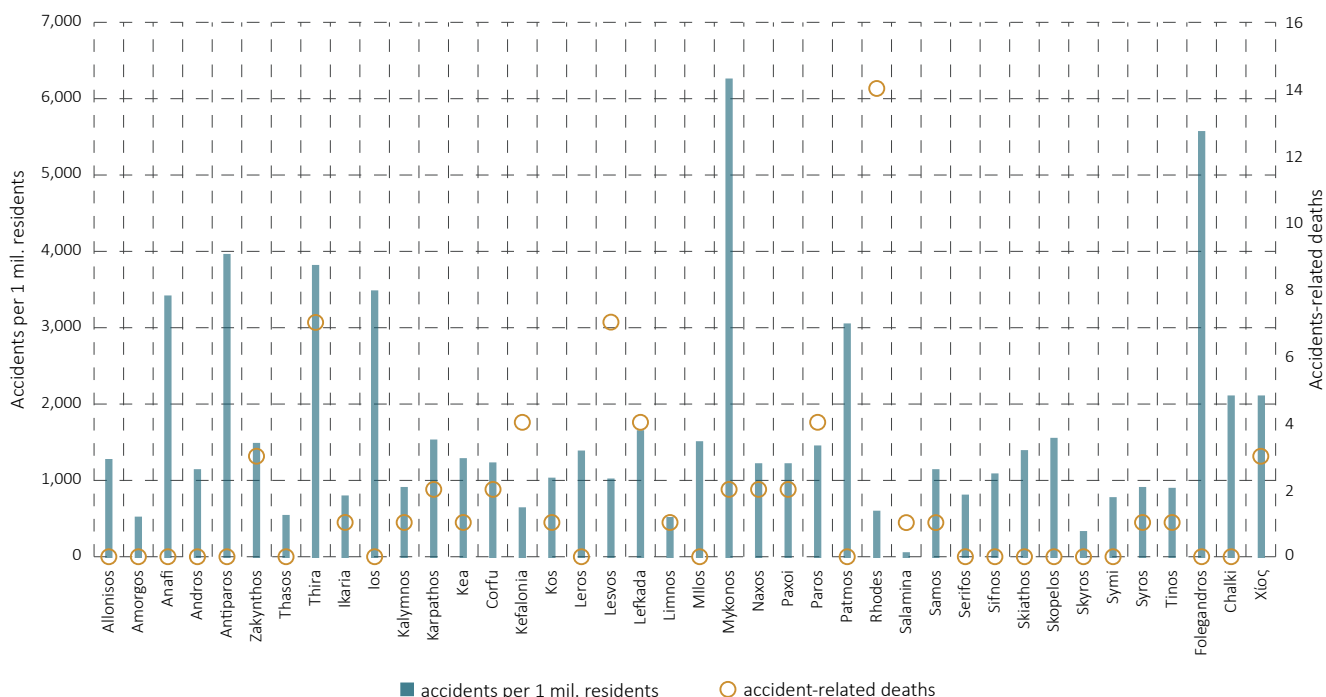
3.3.3 Road transport

Given the nature of the islands, their road network is limited, with a lack of major roadways (with some exceptions due mainly to national defence). The basic needs involve road connections between the entry-exit gateways (ports, airports) and major residential centres and points of tourist interest. As indicated by the relevant texts in the Regional Spatial Planning Frameworks¹⁷, there is a need to upgrade the quality and safety of the road network, and to improve mobility in the urban areas of the islands.

Road Safety

Traffic accidents are a topic of particular concern for road transport in insular Greece. Based on ELSTAT data for 2021, 7.3% of traffic accidents in the country as a whole occur on the islands under review, while a significant number of those take place during the summer months. On average, 45% of annual accidents occur during the three summer months, while there are cases, such as Paros and Kefalonia, where that percentage is as high as 60%. Graph 13 presents the number of traffic accidents (weighted for population) and the relative number of deaths for the islands.

Graph 13: Data on traffic accidents and deaths on Greek islands (2021)



Source: ENRISST Research Infrastructure, processed by the Transportation and Decision-Making Laboratory

¹⁷.. <https://ypen.gov.gr/chorikos-schediasmos/chorotaxia/ethniki-politiki/>

Electromobility

According to data from the Hellenic Institute of Electric Vehicles (HELIEV), as shown in Figure 2, there are currently more than 250 charging points on the Greek islands, with Rhodes in first place with 54.

Figure 2: Electric vehicle charging points on the islands



Source: Hellenic Institute of Electric Vehicles (HELIEV), processed by Civinet

3.3.4 Soft mobility

On some islands, we come across important initiatives aimed at promoting soft mobility (walking, cycling) in their urban and non-urban areas (see also Section 5). In the past, some bike-sharing systems have operated on a number of the islands under review (Corfu, Syros, Limnos, Samos), though their operation was interrupted. Currently, of all the islands under review, bike-sharing schemes are in operation only on Poros and Rhodes. It is worth noting, however, that in the coming years, the installation of shared bicycle stations is expected to sharply increase as there is provision for funding to procure and install such systems on various Greek islands (e.g. Lefkada, Skiathos, Chios, Psara, Poros, etc.). Aside from bike-sharing systems, cycle

paths and/or bike lane networks have been developed on some islands (no quantitative data are available), most prominently in Kos (12.3 km of urban cycle paths).

On most islands, parts of the traditional footpath networks have also been highlighted, restored and sign-posted, with leading examples seen in Andros (160 km), Tinos (152 km), Sifnos (100 km), Ithaki (51 km) and Kythira (32 km).

Meanwhile, a large number of island settlements are pedestrianised, either completely or to a great extent, while some roads on islands are pedestrianised during the summer months at specific times (no data available).

SECTION 4: What to consider when developing a SIMP

In this section, you will find recommendations and comments on the guideline steps for preparing an ELTIS SUMP, regarding the preparation of a SIMP for a small or medium-sized Greek island.

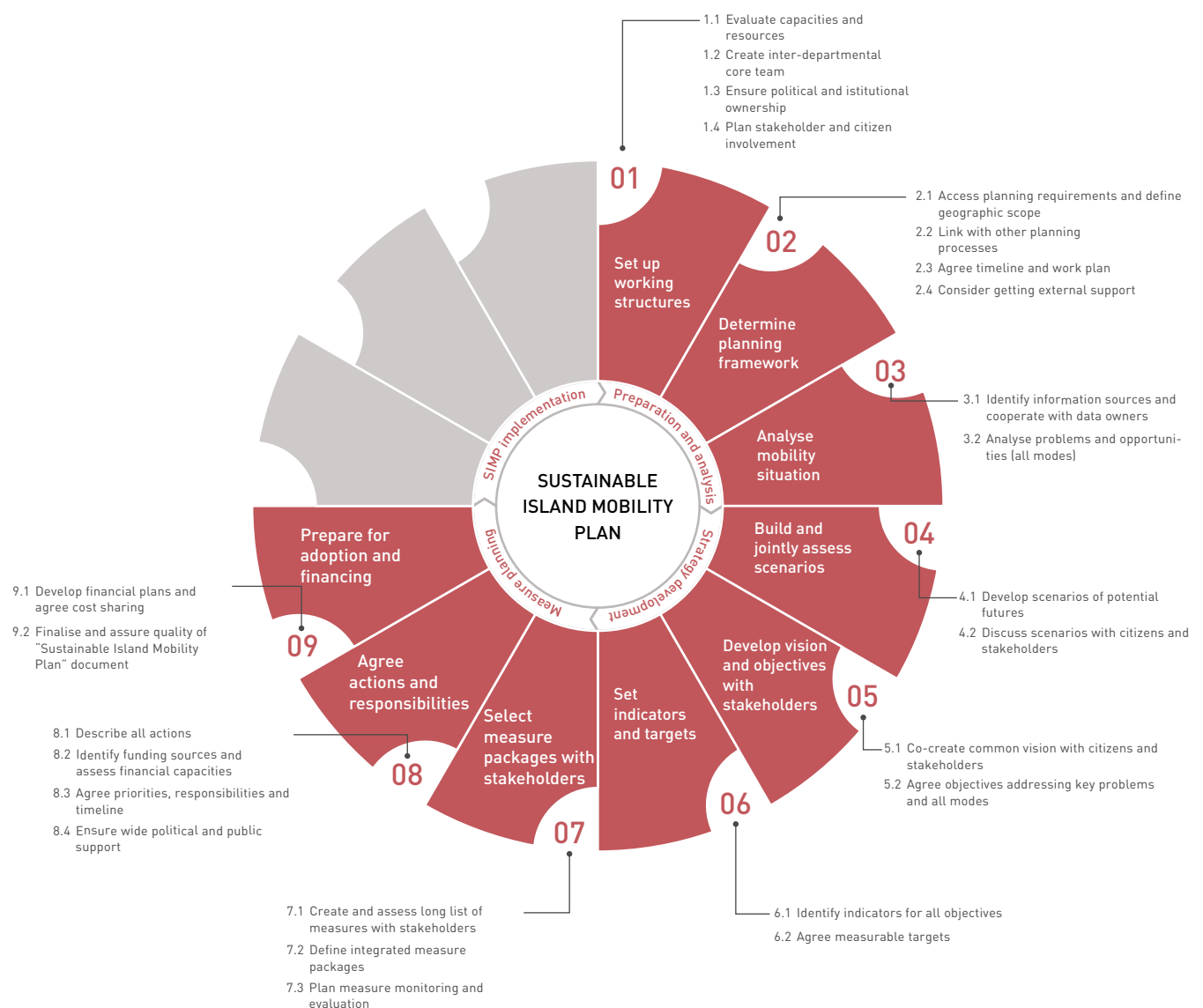
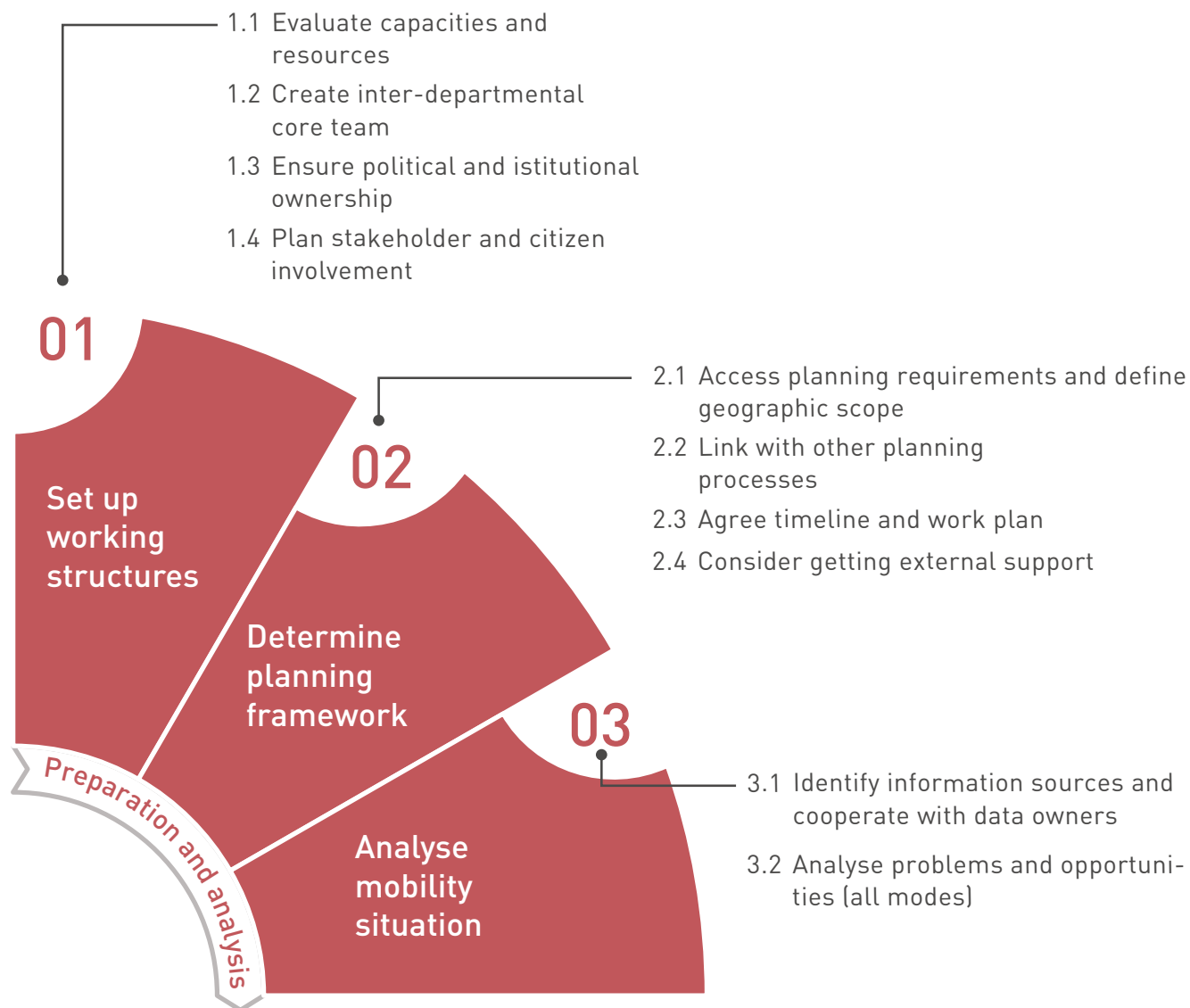


Figure 3: The nine steps of Sustainable Mobility Planning for the islands

PHASE 1: Preparation and analysis





ACTIVITY 1.1: Evaluate capacities and resources

It should be known from the start that developing a SIMP for a small or medium-sized island will come up against difficulties related to the competency of the municipal mechanism to develop such a plan and to implement policies and innovative measures in areas and settlements that have always functioned differently.

Such competence is not so much related to funding sources as to adequate human resources and training of personnel assigned to the task. Many of the smaller islands do not have a Technical Department or a university-trained engineer, and even where such engineers exist, their specialisation is not related to mobility/transport and they have had no related training.

At all such islands, without exception, the few engineers who may work there are also burdened with the daily duties and operation of key infrastructure of the island (public buildings, water supply, sewage, energy, port facilities, road network, etc.) and despite the interest of some to become involved in issues of innovation, they do not have the opportunity within their contractual work hours. Additionally, it is common on the islands for every resident to be engaged in more than one business

activity, which also constrains working hours and the inclination of personnel to become involved in issues related to SIMPs.

In this context, the islands face considerable difficulties in obtaining additional resources from funding programmes, while additional requirements associated with their sensitive natural and cultural environment form yet another obstacle in implementing measures.

As regards the budget for developing a SIMP, serious consideration should be given to the fact that it is not relative to the permanent population of the island and it is not derived by merely scaling down the budget of an urban SUMP. As has already been documented, the SIMP is essentially 'two SUMP in one', as it must examine two periods of mobility on the island: the tourism high season and the winter period with the smaller population on the island. The population during high season is many times larger than the permanent population; it is of a size comparable to an urban population and exerts great pressure on the island, which is never equipped with urban infrastructure and urban services. The problems that arise are different

and different solutions will have to be proposed. The sensitive natural and cultural environment adds restrictions and complexities that do not occur in urban areas. Additionally, all participatory procedures are significantly more complex and demanding, as there are numerous critical but diverse population groups on the island (see Activity 1.4). All this complexity requires composite participatory procedures, whether these are undertaken digitally or physically. As a result, each SIMP should begin with a minimum budget that should be no less than a SUMP budget for a medium-sized mainland city.

For this step, the situation should not be embellished at all, because it is possible that the SIMP either will not be able to be completed, or it will have no chance of being implemented.

ACTIVITY 1.2: Create inter-departmental core team

Given the lack of engineers in the municipal mechanism and due to the need to develop a multidisciplinary plan, it is critical for the SIMP team to include employees from almost all municipal departments. In addition to engineers, the team should include the municipality's public relations office, as well as employees working in areas related to education, welfare, culture, sports, tourism, the environment and the municipality's financial management.

It is also critical that the Municipal Port Fund be represented on the team, along with any employees who offer transport services using municipal buses or other modes of transport (e.g. staff working in the Home Help programme).

In any case, people are needed who believe in the SIMP objectives and are willing to provide data, proposals and services that will help develop a realistic and effective plan.

ACTIVITY 1.3: Ensure political and institutional ownership

Given the difficulties of a SIMP, the municipal government's strong support of the planning process must be considered a given from the start.

Additionally, the participation of other municipal government parties should be ensured, particularly the party that could succeed the current municipal authority in running the municipality. No plan – no matter how good it may be – will be implementable if it does not have the approval of the potential next municipal government.

Moreover, no SIMP will be easily implemented if a large number of council members and opposition parties are actively against it. It is better to adopt a less ambitious plan that can be implemented than a ground-breaking plan that will be abandoned through an ongoing process of challenges and conflicts from the opposing faction.

ACTIVITY 1.4: Plan stakeholder and citizen involvement

Participatory procedures are absolutely crucial for a SIMP, as the local community of an island is small, these procedures can easily be developed and have a great influence on a major section of it, while the seasonal population that comes from other parts of Greece or from abroad can exert pressure for change in more innovative directions.

Therefore, all individual critical population groups should be taken into consideration. Some of these are:

- permanent residents/employees
- students
- senior citizens
- professionals who live on the island permanently
- professionals/investors who do not live on the island permanently
- employees who do not live on the island permanently
- holidaymakers with their own holiday home
- domestic tourists
- tourists from other countries
- tourists of different categories with varying needs for travel (hotel guests, tourists who rent flats, Airbnb users, campers, etc.)

All these population groups are often of a differing economic, educational and cultural background, and may speak a different language. They certainly have multiple and varied needs and requirements, which may not always be easily reconciled in a single strategy.

Within this context, consultation procedures and tools should take account of all these differences, without ignoring other types of diversities related to gender, religion, origin, income, etc., more commonly seen in urban areas. To that end, a questionnaire-based survey should be undertaken in two stages (tourist season and off-season), while the questionnaires should be written in at least two different languages (Greek, English) or more, if the majority of tourists visiting the island come from a specific country (e.g. France, Germany, Italy). Part of the in-person consultation process could be combined with cultural events held during the summer period which draw large numbers of visitors, while other procedures could take place on a smaller scale

during the winter months, when permanent residents are more interested in anything that can brighten up their routine. A list of possible actions for participatory planning and consultation that could be implemented as part of a SIMP follows:

1. **Weekly activity on social networking media:** dissemination of content prepared by the SIMP team, interconnection with the municipality's online media, local press, pages and groups in the area, response to messages.
2. **Using the Tourist Information Centre:** (if there is one) to disseminate the questionnaires and informational materials.
3. **Taking advantage of already scheduled events and actions or opportunities**
 - Cultural festivals
 - Athletic events
 - Environmental actions
 - School festivals or celebrations
 - Actions on energy
 - European Mobility Week and Car-Free Day
 - World Environment Day
4. **Staging actions on the theme of sustainable mobility**
 - Film showings
 - Lectures/presentations
 - Topic-specific discussions, etc.
 - Arts & crafts workshop
 - Cycling tours
 - Hiking
 - Sports tournaments
 - Children's/family festivals
 - Volunteer actions, e.g. footpath clearing
 - Collective map-making and location-based games for all ages
 - Treasure hunt

5. Actions focused on school communities

- Educational programmes in cooperation with the competent teachers
- Actions to inform and raise awareness in the school playground with students, parents and teachers
- Participatory planning workshops for students' safe and convenient access to school (Safe Routes to School)
- Coordinated access to school by bicycle to ensure road safety

6. Pilot and symbolic interventions with citizens

- Pilot design of cycle paths or footpaths or pavements with temporary materials (e.g. flexible bollards, paint, planters)
- Measures to reduce vehicle speed with temporary materials (e.g. painted crosswalks, visual interventions, etc.)
- Creation of small parks at parking areas (Parklets) with temporary materials
- Signposting corridors and points of interest
- Improved visual and acoustic experience in public spaces/roads with creative means (e.g. graffiti, street musicians, sound installations etc.)
- Improved experience of public space, with either temporary or permanent means (e.g. planting, addition of rest spaces, improved shop image and function, improved accessibility, protection from weather, canteens, lighting, etc.)

7. Identification and highlighting individuals and groups who contribute to sustainable mobility

- Establishing a local award for initiatives
- Designation of ambassador for cycling, walking, public transport, road safety, etc. (e.g. Bicycle Mayor)

8. Pilot introduction of demonstration events

for alternative forms of travel by the municipality and local businesses (e.g. electric vehicles for municipal works, shuttle mini-bus, electric bicycles, scooters, etc.)

9. Low-cost interventions for European Mobility Week

such as bicycle racks on buses and taxis, prohibiting illegal parking with flexible bollards, planters, etc.

10. Temporary creative interventions to existing modes of transport

to improve travel experience at terminals and individual stops, and within the vehicles (e.g. books, art, games, etc.)

11. Combined services to provide incentives:

favourable or free services from the municipalities and businesses if citizens arrive at a specific destination (ideally with accessibility or parking deficiencies) using means of sustainable mobility

12. Photography competition

for photographs to be included on the SUMP consultation platform and to show at a future exhibit

13. Themed Walk:

leading walks through traditional trails and cobblestone footpaths, which would include stops at points of interest where cultural and other events could be staged (theatre and dance performances, concerts, outdoor exhibitions, picnics, discussions, film showings, etc.).

Those drafting a SIMP will nevertheless have to be prepared for pleasant surprises, as it is possible that, through the consultation process, more radical suggestions will come up than those that would be acceptable to an urban population. This could happen because island settlements often come up against challenges and impediments that an average mainland city does not. These challenges seriously question the sustainability of the island and its business community, and therefore they are often prepared to accept or to recommend very ground-breaking solutions (e.g. extensive pedestrianisation of settlements, walking and cycling networks, introduction of electric vehicles, etc.).



ACTIVITY 2.1: Assess planning requirements and define geographic scope

On a small or medium-sized island, the geographic scope of a SIMP will include the entire municipality. This means that it will either be the entire island or a complex of islands, if they belong to the same municipality (e.g. Naxos and the Small Cyclades).

This decision is supported by the absolutely critical geographic elements of the island: the port (one or more) and its coastline. Whatever takes place on an island, particularly regarding travel/transport, is related to and influenced by these elements that delineate the geographic space and mobility on the island.

In the case of a complex of islands of the same municipality, it is important to examine them as a

whole, as most of the municipal and private services are not offered on all islands, but only on the largest one (secondary education, healthcare services, banks, Citizens' Service Centre, retail shops, etc.). This usually entails frequent inter-island travel for residents of the smaller islands which should be taken into consideration in the overall matrix of movements examined in the SIMP.

In cases of small or medium-sized islands with an urban area (e.g. Syros and Kalymnos), this urban centre should be examined in greater detail, but should not be isolated from the rest of the island and studied individually.

ACTIVITY 2.2: Link with other planning processes

This activity does not differ significantly from a SUMP.

ACTIVITY 2.3: Agree timeline and work plan

This activity does not differ significantly from a SUMP.

ACTIVITY 2.4: Consider getting external support

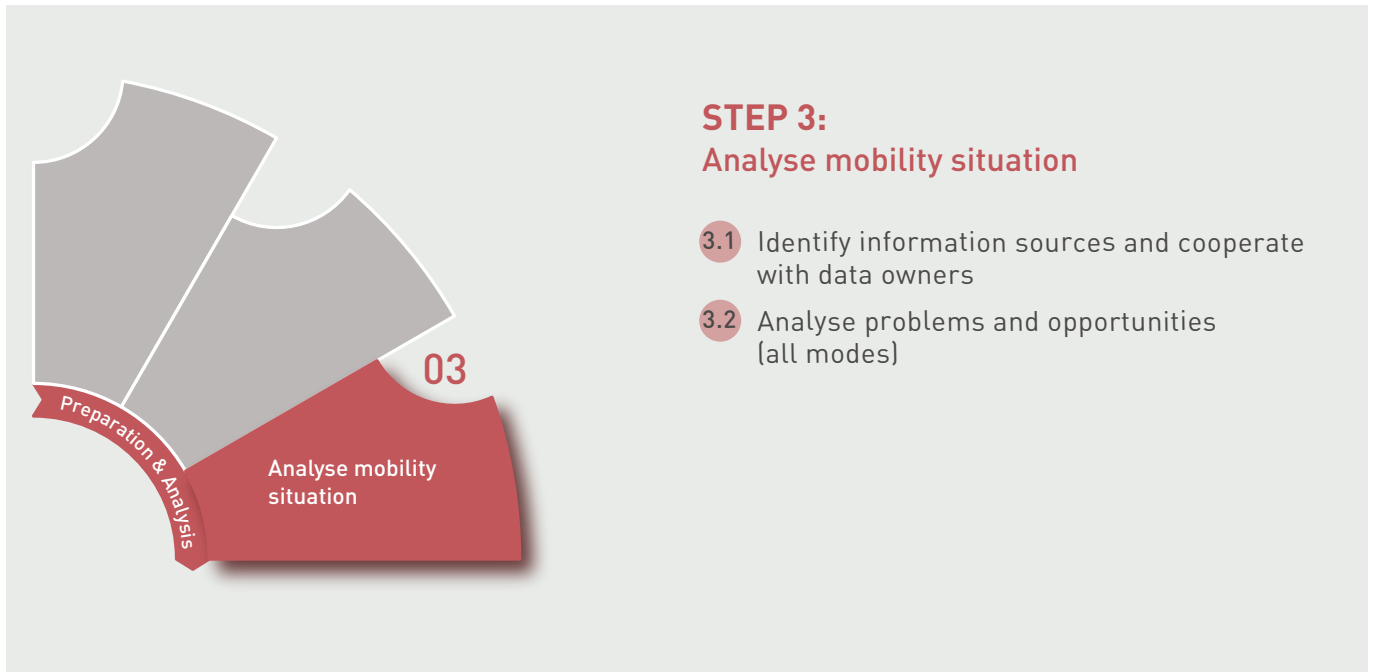
Particularly where islands are concerned, and given the lack of adequate permanent personnel at the municipality, the role of external assistance from:

- private consultants and scientific experts
- local authority networks and development companies
- volunteer permanent residents and students
- volunteer tourists or holidaymakers with a holiday home
- the academic community of an island university
- public services such as the Region, Management

Organisation Unit (MOU S.A.) and the Hellenic Agency for Local Development and Local Government (EETAA)

- non-governmental organisations active in environmental issues is a particularly critical parameter that should not be overlooked.

Moreover, most islands are home to affluent families with property holdings there who often provide funding for the purchase of essential equipment or building infrastructure on the island. These families could also fund the development or implementation of part of a SIMP.



ACTIVITY 3.1: Identify information sources and cooperate with data owners

Available data on the islands are usually limited or outdated, as studies on mobility issues are not often conducted, except in certain areas with acute problems. It is more likely that data can be drawn from academic papers, NGO projects and private data sources, than from public studies and databases.

As part of this, a careful plan must be devised to collect field data, as this task may prove particularly tedious and time-consuming, since data will have to be gathered for different times of the year.

It is strongly recommended that a basic data set be collected initially to understand and document the

island's more important challenges; then, depending on the direction that proposals take, supplementary, more in-depth data can be gathered from those locations presenting the greatest problems.

This approach should be outlined with specific detail in the contract with the external consultant and the municipality, as this issue could lead to problems in the process of developing the SIMP. This could involve either a very high project budget from the start that the municipality will not be able to meet, or later lead to a deadlock in the municipality's cooperation with the contractor or to low-quality deliverables.

ACTIVITY 3.2: Analyse problems and opportunities (all modes of transports)

As already mentioned, the process of analysing problems and opportunities should follow two distinct time periods: tourist high season (August) and wintertime (December-February).

During the tourist season, the island faces problems that are mainly related to its seasonal population, which often is the size of an urban population (up to eight times the permanent one) and is required to serve their particular movements (which do not involve travel for work or school, but for leisure), without having in place urban infrastructure and services. These problems are more acute around the ports, the main settlements and the tourist poles of attraction (beaches, monuments, sights, major tourist facilities, areas and venues for nightlife, etc.).

During the winter, nearly every island faces 'transport poverty', as residents without their own vehicle cannot move around the island independently, as residents in urban centres can. There is often no bus service during these months, other than some school buses, while taxis are expensive and the routes quite long at times. Carpooling has always been a common practice on the islands since days of old, but it does not offer residents the capacity for independent movement. As a result, the elderly and children have limited options and opportunities for movement.

The analysis of the current situation, therefore, will have to focus on these two phenomena and periods, avoiding exhaustive analyses usually found in SUMP, particularly of issues that are not critical to the island setting (e.g. excessive analysis of traffic loads and modelling of vehicle movement on the road network).

Noise and air pollution are problems only at specific locations on the island during the summer.

Serious traffic accidents (involving death or serious injury) have different characteristics and causes on the islands, and on some of them, such accidents do not even constitute a problem, based on the statistics they

keep. Nevertheless, it is a critical issue that should be carefully examined.

There is no large-scale infrastructure, other than some ports and airports, which are still small-scale on the small and medium-sized islands.

The analysis should focus on the main modes of transport for visitors and residents, which are:

1. private and rental motor vehicles
2. taxis
3. buses (municipal and intercity KTEL)
4. tour buses
5. vehicles serving guests at major hotels (vans)
6. commercial transport and supply lorries
7. boats for sea transport
8. bicycles and other micromobility vehicles (scooters, etc.)
9. walking
10. mobility aids for persons with disabilities (wheelchairs, etc.)

Each one of these modes of transport plays a different role within and outside the settlements. Many settlements do not permit motorised vehicles to enter their interior. Some tourist poles of attraction (e.g. beaches) are not accessible by road. There are islands where sea transport and walking are predominant. Any analysis, therefore, will have to take into consideration the specific matrix of movement and available means and modes of transport on each island, and strive to render them spatially (mapping), qualitatively and quantitatively.

A comparative analysis of the main routes of the island and the use of various modes of transport based on elapsed time, cost of use and travel conditions is deemed advisable. In any case, where documentation and measurements are undertaken, they should include all forms of travel (e.g. there is no point in documenting

traffic loads at a particular cross-section of a road or an interchange without documenting pedestrian and bicycle traffic at the same location).

Another major issue for islands during the tourist season is parking. In rare cases has provision been made at tourist poles of attraction for spaces sufficient to meet the demand that arises during the high season. For that reason, available legal and illegal parking spaces should be documented in these areas along with their corresponding occupancy, in order to assess the extent of the problem and to formulate reasonable solutions.

During the winter season, it is critical to record the rate of car and two-wheel motor vehicle ownership, and identify the number of permanent residents who cannot travel with their own means, as well as their age and economic status.

The items to be documented should include networks of footpaths and cycle paths which are located in the extra-urban space and connect settlements and tourist poles of attraction. This infrastructure does not serve the daily movements of residents, but it does serve as a means of touring the island and its sights in the most sustainable manner.

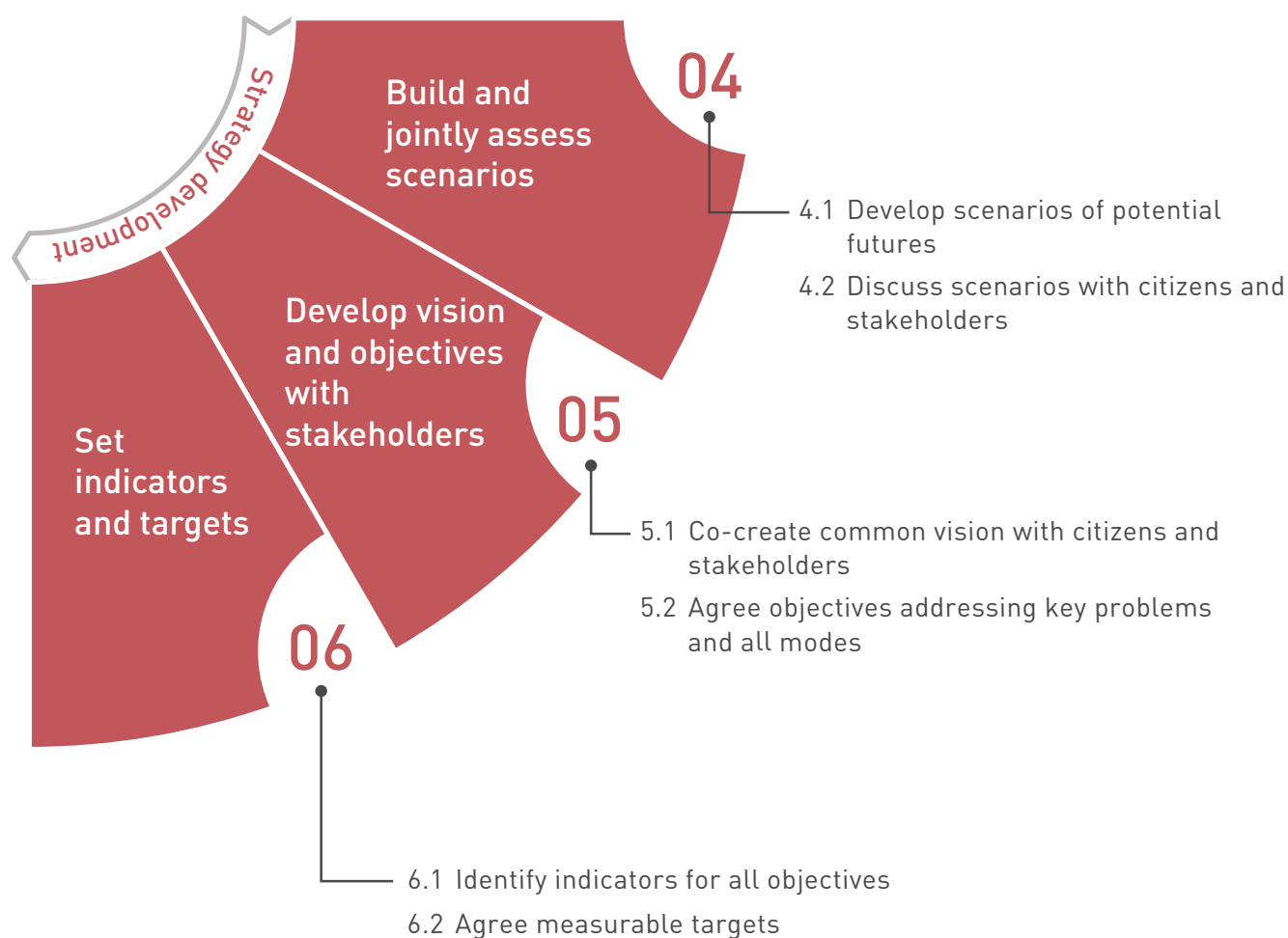
As far as sea transport is concerned, it is advisable to document fishing harbours and anchorages in addition to ports, as the former often serve as a starting point for sea connections to hard-to-reach locations on the island. In all cases, enterprises offering sea transport and tour services should be made known.

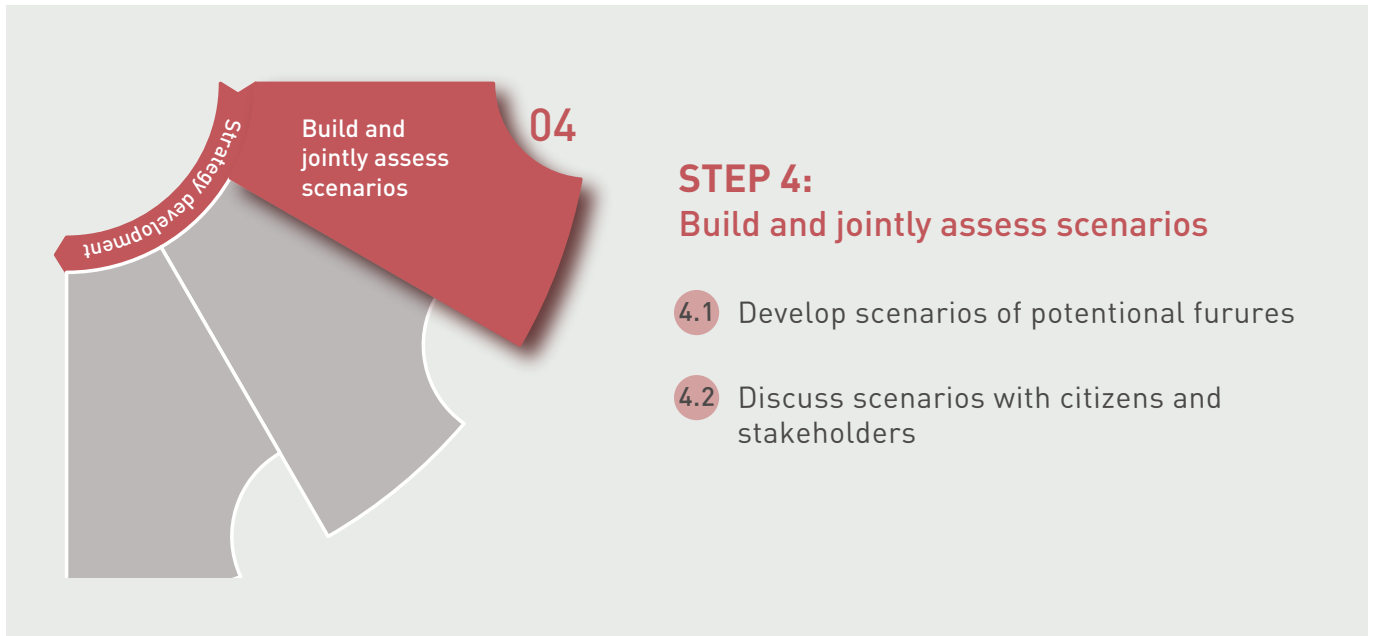
On islands where movement relies on animals, it is recommended that the location and purpose be documented.

Aside from the main road connections that accommodate daily travel, it is recommended that other routes offering beautiful views also be documented, as these attract numerous visitors.

Lastly, with regard to the decision of allow electromobility onto the island, the manner in which the island is supplied with electricity should be examined. We believe it is more prudent for an island not to rush to adopt electromobility if it is not connected to an electrical grid on mainland Greece but generates energy locally using mainly diesel.

PHASE 2: Determine planning framework





ACTIVITY 4.1: Develop scenarios of potential futures

This activity does not differ significantly from a SUMP.

It is noted, however, that these scenarios should be of a growth-oriented and macroscopic nature and not scenarios of measures. At this point, we want the municipality to decide the growth path it wants to follow for its island, as this will influence decisions made going forward, such as its vision, objectives, targets and measures.

The growth path is directly related to the tourism model the island expects to attain, as well the residential development model. These matters should be explicitly stated at this point and be assigned certain macroscopic quantitative values.

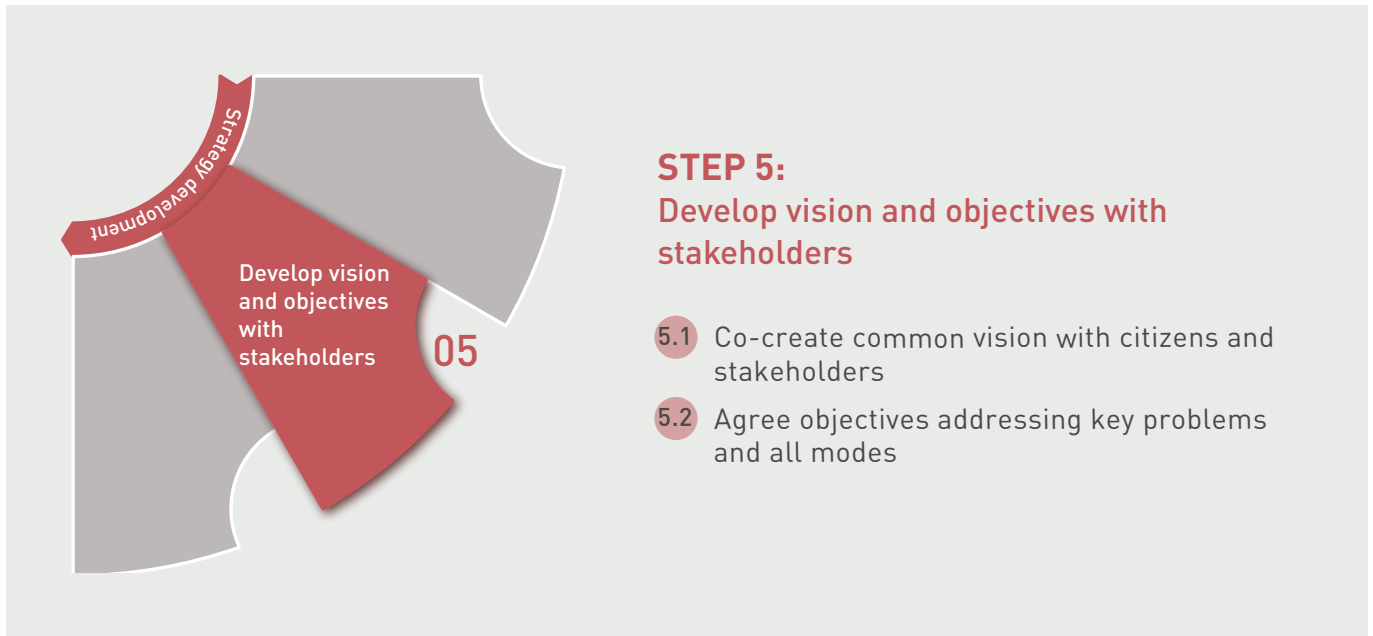
The scenarios should also be clear as to whether the island expects to serve the existing number of motor vehicles, a greater number or a smaller number.

ACTIVITY 4.2: Discuss scenarios with citizens and stakeholders

Implementation of this activity should take into consideration what is included in Activity 1.4.

One critical topic is who will decide the growth path of the island on which the mobility plan will be based. There is no guarantee that this path will be sustainable, but nearly every option has advantages and disadvantages.

It is more likely that this direction has already been established on every island by other policies and plans made by the municipal authority, and at this point it should be described specifically to document the SIMP's commitments.



ACTIVITY 5.1: Co-create common vision with citizens and stakeholders

If the most radical vision for urban areas were to have a 'car-free city', then for islands such a vision would be 'car-free tourism'.

This is supported by the fact that passenger cars during the winter months are not a major problem. At the same time, the permanent population of an island does not have the critical mass that would allow for mobility with mass transport. Additionally, the density, terrain,

weather conditions and distances on an island do not allow for permanent residents to be served solely by walking and cycling, as would be the case for numerous residents of a small, flat town.

As to the rest, the points under Activity 4.2 apply.

ACTIVITY 5.2: Agree objectives addressing key problems and modes

The points under Activity 4.2 apply.



ACTIVITY 6.1: Identify indicators for all objectives

This activity does not differ significantly from a SUMP.

It is important to note that setting indicators without a baseline value and which cannot easily be measured in future will be of no use to the SIMP, regardless of whether, from a scientific aspect, an indicator that is difficult to measure may be more reliable than an easily measurable one.

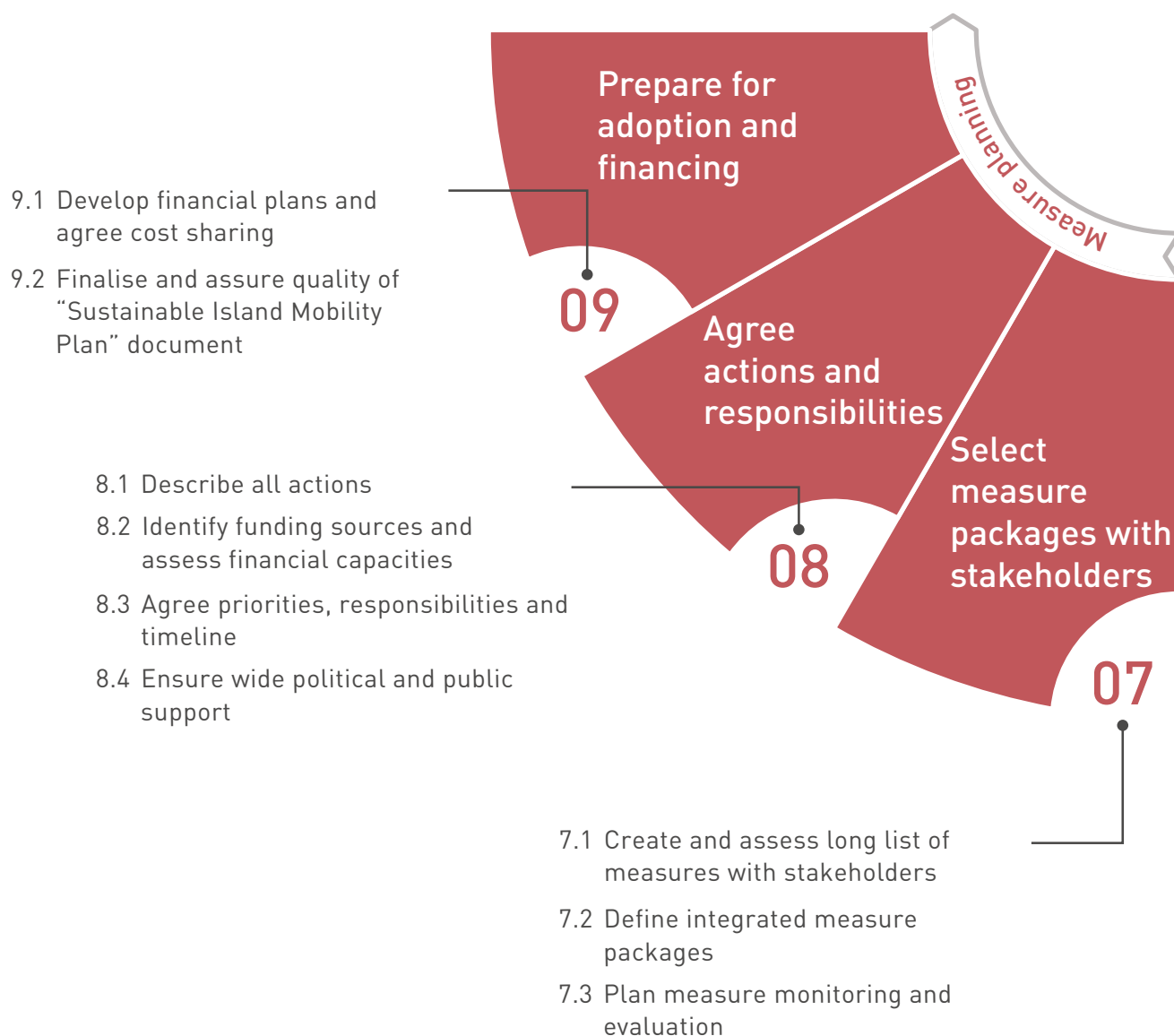
The aim of this step is to approximate the monitoring of the SIMP's implementation and outcomes and not to develop an idealised monitoring mechanism that will not function in practice.

ACTIVITY 6.2: Identify indicators for all objectives

This activity does not differ significantly from a SUMP.

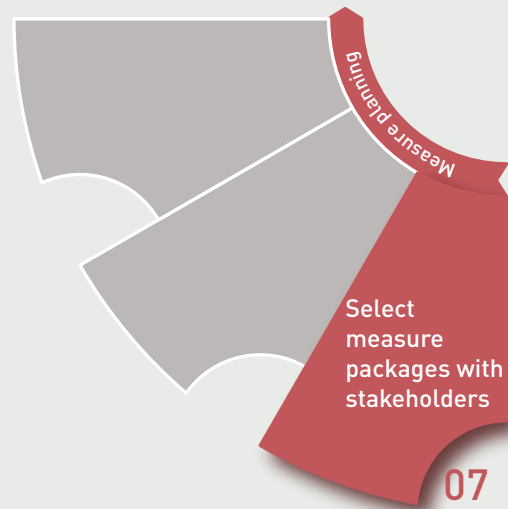
The points under Activity 6.1 apply.

PHASE 3: Measure planning



STEP 7: Select measure packages with stakeholders

- 7.1 Create and assess long list of measures with stakeholders
- 7.2 Define integrated measure packages
- 7.3 Plan measure monitoring and evaluation



ACTIVITY 7.1: Create and assess long list of measures with stakeholders

The measures to be included in a SIMP are usually quite different than those of a SUMP, and are implemented quite differently as well.

First of all, as already mentioned, they aim at more sustainable tourism for the summer; secondly, they also aim to address transport poverty during the winter season. Trips that focus on urban-type work (e.g. home to office) are of lesser priority, and are superseded by those related to leisure.

The framework upon which the proposals are designed and then implemented is completely different. The lack of large-scale urban infrastructure, and the inability to develop it in the sensitive insular environment leads unavoidably to adopting a lighter-quicker-cheaper approach. In other words, it leads to versatile infrastructure and to alternating forms of implementation at different times of day and/or months of the year. It is far easier to implement an extensive pedestrianisation of the waterfront road of a port, for example, or to allow cars to park inside the port (e.g. Aegina), provided it is enforced only at specific times of the day and during certain months of the year. A

proposal that might become permanent in an urban environment is more likely to be adopted on an island as a flexible, alternating scheme, as a permanent solution may not bring about the best possible results or be able to gather sufficient consent or even be feasible at all.

One advantage of the islands is that they have always had large pedestrianised areas, at times even entire settlements. This could serve as a suitable basis to expand pedestrianised areas where needed and to modernise existing ones, ensuring they are accessible to persons with reduced mobility (PRMs) and allowing for deliveries to that area in a more efficient and 'greener' manner.

The residential areas where, for whatever reason, pedestrianisation is not possible or advisable will at least be designated as 'zero emissions and accidents' areas, in line with 'low emission zones', 'superblocks' and 'vision zero', with provisions and measures to achieve that target.

In any case, a SIMP should recommend an integrated soft mobility network (footpaths and bike lanes) that

will extend throughout the island and facilitate visits to all major destinations on the island without the use of a car. The footpath networks (restoration of historic paths; not opening new ones) and bike lane networks are important for the islands and there is always some kind of basis on which they can be developed. It is important to provide for stopping points with shade, available water and intersections with public transport routes or facilities for phoning for a taxi.

Promoting cycling does not mean constructing cycle paths throughout the island, but mainly setting lower speed limits for motor vehicles (up to 30 km/hr) and developing some policies on the part of the public and private sectors (bike-friendly enterprises and islands) to encourage and serve bicycle riders. These policies should include all population groups and particularly young parents, children, the elderly and women. The construction of dedicated cycling infrastructure or mixed-use infrastructure for cyclists and hikers should be concentrated in appealing seaside routes, where they are already used for leisurely strolls and there is room to develop the necessary infrastructure.

For areas on the island to which there is no access by road, the solution of footpaths and sea transport should be given priority. Achieving accessibility to all points of interest on the island via motor vehicles is not established as an overall intention in this guide, as islands have sensitive natural environmental systems and these should be preserved and protected.

Accessibility for persons with reduced mobility should be a high priority, even if it is difficult to achieve throughout the entire island. However, certain areas of the island should be designated and rendered universally accessible, suitable for holidaymakers who are PRM or elderly (silver tourism).

The limited entries/exits on the island (ports and airports) lead to bottlenecks during the summer and SIMPs should give particular weight to these areas. These locations will often determine whether an island has the capacity to move in a direction of further tourism development based on its current model, or to shift to more sustainable tourism with fewer cars, or even in a 'degrowth' direction with less tourism. In some cases, the relocation of the port to another site near but outside

the saturated area may solve the problem, provided all necessary spatial and urban planning measures are taken to prevent the problem from occurring at the new location.

The sensitive natural and cultural environment also does not allow for solutions that will allocate more space to car-dependent mobility. Most tourist islands in Greece are already saturated with traffic and the state does not provide adequate funding to further support car-dependent mobility. This may lead more quickly to innovative mobility solutions than in a medium-sized, non-tourist town which has come to terms with its more or less sustainable mobility system. Therefore, the proposals put forth in a SIMP can and must include socially and environmentally useful innovation.

Provision should be made for innovative solutions in areas with steep slopes, as these cannot adequately serve citizens who are walking or cycling, and public transport can rarely approach. Small, versatile electric vehicles (Tuk Tuks), mechanical lifting systems (e.g. Santorini cable car, vertical lifts and inclined lifts) and encouraging the use of electric bicycles are some possible measures to address this issue.

With regard to public transport, the proposals should simultaneously apply to travel within large settlements, connections between settlements and tourist poles of attraction, the various times of year, and the service of areas which cannot support fixed timetables during any season of the year (those with very small populations or sparsely populated areas). Schemes for on-demand transport should be examined, along with various forms of partnership between the public and private sectors. Additionally, synergies between buses and taxis and potentially shared vehicle systems should be investigated. Moreover, methods to transport bicycles and persons with disabilities on buses should be looked into.

Modern transport systems, such as Mobility as a Service, combined with other tourist services, could flourish on the islands (e.g. Astypalaia), where transportation service providers are limited and may more easily come to an understanding with one another to cooperate as part of 'win-win' company formations. On some islands, taxi owners also own buses (e.g. Kea), where it would be

even easier to adopt such a measure.

In any case, the smooth, sustainable and efficient operation of taxis should be included in SIMP proposals, as taxis are an essential link in the island transport chain.

For inaccessible sites which attract many visitors at once but who cannot be served by cars (e.g. castles, beaches, churches at the top of a hill), solutions such as a shuttle bus should be investigated, preferably using electric ones to prevent noise and air pollution.

Managing parking should certainly be a discrete measure (or bundle of measures) in the SIMP, but the key aim should be to reduce demand for parking and not to serve existing parking with new infrastructure. Controlled parking systems could also play some role in areas where rotation should be increased or local residential parking should be protected, without necessarily imposing charges for the lawful use of parking spaces.

Improving traffic safety should also be included in the SIMP's measures, focusing in particular on the more hazardous spots on the road network with documented serious accidents and spots with sensitive land use, such as schools, churches and night spots. On islands where motorbike use is extensive from young ages, special campaigns should be undertaken to raise awareness and provide education.

Electromobility should concentrate on islands which are connected to an electrical supply grid on mainland Greece and on vehicles which have high added value for promoting sustainable mobility (bicycles, scooters, buses, taxis, municipal fleets). Measures related to energy savings and responding to the climate crisis may well be promoted through formation of energy communities.

Commercial transport and particularly deliveries to tourism enterprises should be less reliant on large polluting vehicles and non-rational product distribution models. Solutions with electric microcars and cargobikes, as well as solutions relying on transfer/drop-off points for products in locations around the periphery of settlements, should be examined. It goes

without saying that transporting goods using animals should be gradually eliminated and not incorporated into the SIMP.

In the proposals of a SIMP, a strategy of information, education, awareness-raising and participation by citizens in the planning, implementation and monitoring of measures should play a central role. Particular emphasis should be placed on students and business owners, while local associations and organisations should also play a special role in these efforts. Ideally, a group of citizens and representatives of various bodies, along with municipal staff, should form a Mobility and Public Space Observatory, which would be charged with identifying problems on a daily basis and with recommending solutions.

Lastly, the SIMP proposals should include a framework of incentives and counter-incentives for citizens and business owners to encourage some behavioural changes and to reward a shift to a more sustainable track. At the same time, those who do not fall in line with the SIMP directions, though they are financially capable of doing so, should have to compensate the municipality and local community for the nuisance and obstacles they raise against the common vision.

Given that the SIMP is a plan of strategy and cannot on its own lead to the implementation of every infrastructure or policy that is proposed, it goes without saying that the measures should include a series of necessary accompanying studies/detailed designs for the SIMP measures, as well as urban/spatial planning regulations related to it.

ACTIVITY 7.2: Define integrated measure packages

This activity does not differ significantly from a SUMP.

However, it is recommended the SIMP measures be grouped into packages for each settlement or tourist/spatial unit. Essentially, each individual area of the island should obtain its own masterplan through the SIMP, and all of these plans together, along with some horizontal measures applied across the entire island

(e.g. general speed limit of 30 km/hr), should comprise the SIMP for the island.

In addition, it should be made clear in the packages of measures which measure is a precondition for another to avoid faulty application of the measures.

ACTIVITY 7.3: Plan measure monitoring and evaluation

This activity does not differ significantly from a SUMP

The points under Step 6 apply.

STEP 8: Agree actions and responsibilities

- 8.1 Describe all actions
- 8.2 Identify funding sources and assess financial capacities
- 8.3 Agree priorities, responsibilities and timeline
- 8.4 Ensure wide political and public support



ACTIVITY 8.1: Describe all actions

This activity does not differ significantly from a SUMP.

ACTIVITY 8.2: Identify funding sources and assess financial capacities

This activity does not differ significantly from a SUMP.

The points under Activity 1.1 apply

ACTIVITY 8.3: Agree priorities, responsibilities and timeline

This activity does not differ significantly from a SUMP.

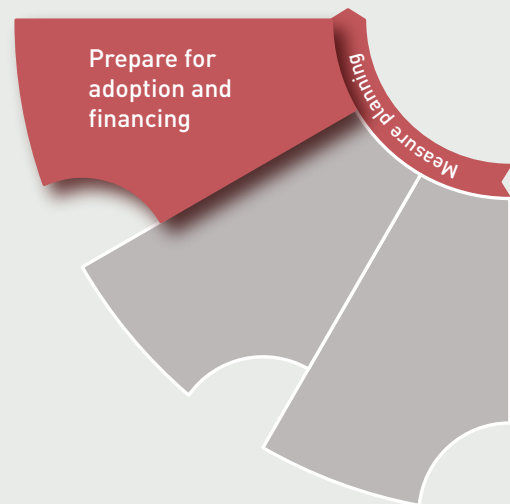
ACTIVITY 8.4: Ensure wide political and public support

This activity does not differ significantly from a SUMP

STEP 9:

Prepare for adoption and financing

- 9.1 Develop financial plans and agree cost sharing
- 9.2 Finalise and assure quality of "Sustainable Urban Mobility Plan" document



ACTIVITY 9.1: Develop financial plans and agree cost sharing

This activity does not differ significantly from a SUMP

ACTIVITY 9.2: Finalise and assure quality of "Sustainable Island Mobility Plan" document

This activity does not differ significantly from a SUMP

SECTION 5: Good practices and innovative measures

This section presents good practices that have been implemented on Greek islands. Also highlighted are innovative measures which have not yet been adequately tested in insular areas, with the hope that through well-planned application, they can lead to positive outcomes. This presentation aims to improve understanding and selection of appropriate measures for the implementation of the SIMP of the reader's choice.

Image 1: Panoramic view of the Hydra settlement



Source: <https://www.xn--mxaakibkcfgaxd3f.com/>

5.1 Significant limitations on car use

Indicative examples: Hydra, Spetses, Chalki, Symi, Nisyros, Sikinos, Gavdos, Psara, Antikythira, Ag. Efstratios, Diapontian Islands

Most Greek islands have settlements which are either fully or partially pedestrianised. Not so much because of a modern, conscious policy supporting sustainable mobility, but because these settlements were never designed for motor vehicles, or even carts, as their surface does not permit the movement of such forms of transport. In these settlements, people always travelled by foot or by riding on animals (donkeys, mules), as their roads have many steps and road widths that do not allow the entry of motor vehicles.

The most typical example is the island and settlement of Hydra¹⁸, which one might describe as a 'car-free island'. Wheeled vehicles are prohibited on the island, except a few that serve social and business needs and they can only travel along a small part of the road network. Residents and visitors move around the island on foot, with animals or the use of water taxis or small boats (e.g. to visit beaches and other residential areas). The prohibition of wheeled vehicles is a key aspect of the island's tourism identity.

Spetses¹⁹ is another island of the Saronic Gulf with

¹⁸ Hydra is an island of the Saronic Gulf with a population of 1,948 residents (based on the 2011 census) and an area of 49,586 km². Its economy is mostly dependent on tourism.

¹⁹ The population is 4,027 residents (based on the 2011 census) and

SECTION 5 - GOOD PRACTICES AND INNOVATIVE MEASURES

significant restriction on the use of cars within the main settlement. Based on a regulatory decision²⁰, private passenger cars, three-wheel and four-wheel motor vehicles are prohibited from driving within the settlement of Spetses at all times. Exceptions are motor tricycles and light quadricycles which are classed as mopeds. Local citizens, public sector employees working on the island, owners and tenants of properties are permitted to bring their car to the island (one car per residence if there is no private parking), but they are forbidden from using their vehicle within the settlement during the tourist season. All of these individuals must obtain a special municipal parking permit which they show when boarding the ferry. They are allowed to park within the settlement only in private or public areas designated by the municipality. All commercial vehicles that wish to travel to the island are inspected to ensure that only those with a specific business activity on the island are entering. The business activity must be supported with relevant documents for transporting products or other related documents.

Other examples of islands where transporting or renting a vehicle by visitors is discouraged are those referring to the title of subsection 5.1.1., as their main settlements are largely unable to accommodate cars (other than travelling to and from the port) and the rest of the road network of the island does not lead to a significant number of settlements or beaches.

Nisyros is a special case, where large motor vehicles are prohibited from entering the main settlement (Mandraki). Only small three-wheeled vehicles are allowed and these are gradually being made electric.

Small islands such as Leipsoi, Agistri, Folegandros, the Small Cyclades and others, though they have a rudimentary road network to cover the limited destinations on the island, the use of cars is unnecessary due to some of the following features: short distances, mild elevations, footpath networks, frequent public transport, affordable taxis, sea transport around the island perimeter. In such cases, additional restrictions on cars are imposed during the tourist season, a practice analysed further in the next section.

the area is 27,121 km². The island's economy is mostly reliant on tourism.

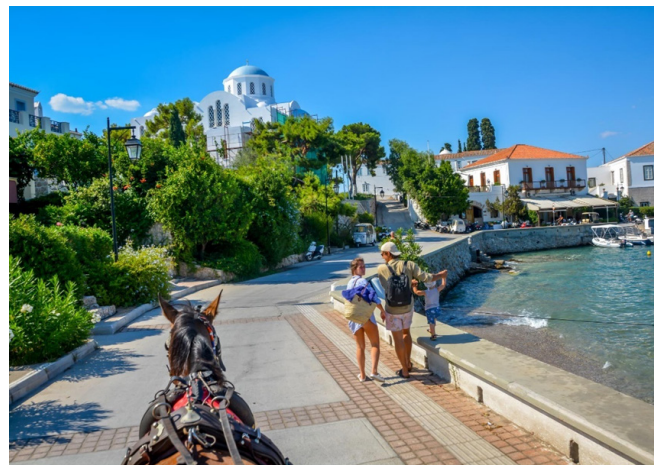
²⁰ Resolution no. 222/2012 by the Town Council of Spetses with amendment numbers 68/2013 and 64/2014

Image 2: The harbour and coastal road of the Symi settlement



Source: <https://images.ferryhopper.com/locations/Symi.jpg>

Image 3: Main modes of mobility in the Spetses settlement



Source: <https://boardingpassport.com/volta-stis-spetses-me-pai-toni/>

5.2 Alternating pedestrian routes, one-way streets and parking areas

Indicative cases: Aegina, Syros, Chios, Kea, Sifnos, Kythnos, Naxos, Kalymnos, Leipsoi, Schoinousa

A common practice to reduce the presence of cars in island settlements during the tourist season is the temporary or alternating use of traffic regulations for specific roads, specific times of day or for entire months.

Typical examples include Aegina, Kea, Sifnos, Kythnos and Leipsoi, where temporary pedestrianisation is connected to the port and the waterfront road of the main coastal settlement. These traffic-free roads are turned over to pedestrians and cyclists during summer evenings (usually 21:00-24:00), once ferry service has stopped for the day.

A similar policy is employed in the main towns of other islands which are not near the sea but attract numerous visitors during the evening hours because of their use for dining and entertainment (e.g. Schoinousa).

The cases of Ermoupoli in Syros and the main town in Naxos are unique, as special traffic regulations are imposed (one-way roads, reverse traffic direction, pedestrianisations) to facilitate the movement of motor vehicles and pedestrians, depending on the time of day or arrival times of boats.

The main town of Kalymnos (Pothia) is perhaps a unique example, as it applies these types of measures during winter when the settlement is subject to heavy rains which flood the main road network.

The temporary use of public premises for parking is also found on some islands; for example, in Aegina the port is used for parking after the last boat departure (nighttime hours), while in Kythnos parking is permitted in the playgrounds of some schools throughout the summer when schools are closed. A common practice is the leasing of unbuilt, privately owned plots/fields to convert them to public parking areas during the summer (Naxos main town, Sifnos, and others).

Image 4: Alternating pedestrianisation of Petrou Protopapadaki Street in Ermoupoli, Syros, allowing it to function as a commercial pedestrian zone during the day and as an exit thoroughfare from the controlled public parking area at 'Vaporía' in the evening.



Source: <https://www.syrostoday.gr/news/11924-Yper-tis-pe-zo-dromisis.aspx>

Image 5: The waterfront road and harbour of the Aegina settlement, which is converted in the evening to a pedestrian zone and parking area, respectively.



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

5.3 Showcasing historical footpath networks

Indicative cases: Aegina, Amorgos, Andros, Anafi, Antiparos, Donousa, Ithaki, Ikaria, Kalymnos, Kea, Kimolos, Kythira, Kythnos, Leipsoi, Lesvos, Naxos and the Small Cyclades, Paros, Patmos, Samothraki, Serifos, Sikinos, Sifnos, Symi, Syros, Schoinousa, Tilos, Tinos, Hydra, Folegandros

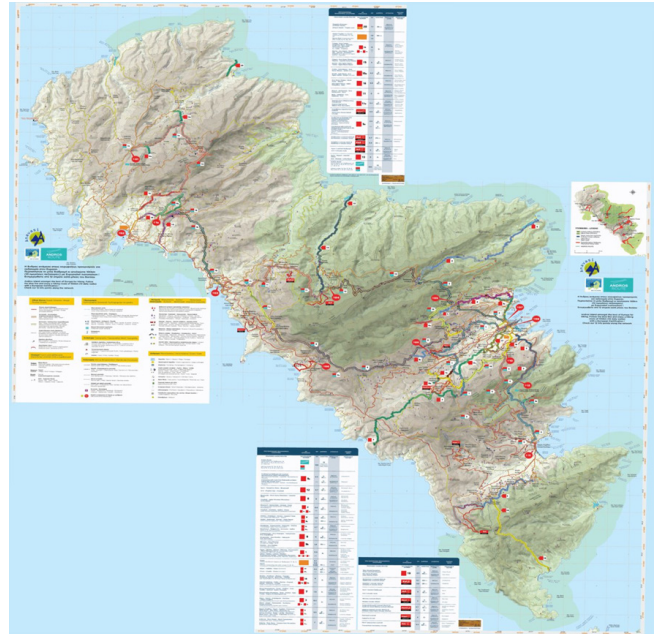
Extensive networks of traditional footpaths, which in the not-too-distant past comprised the main network for moving around the island either on foot or with animals, have been restored, sign-posted and highlighted on most islands. The hiking routes these networks offer are an important infrastructure for developing themed forms of tourism (hiking, environmental, cultural, etc.) that extend the tourist season into the spring and autumn months while enriching the regular activities of summer visitors with excursions into areas of environmental and cultural interest on the islands, without the use of motor vehicles.

In Andros, a 160 km footpath network, showcased through the initiatives of local volunteer groups, has earned European certification²¹. The walking trail network in Sifnos²² comprises 10 footpaths totalling 100 km, while Tinos has a network of 19 footpaths covering approximately 150 km²³.

Kalymnos is another special case as, aside from a network of footpaths, it also features the most extensive network of climbing routes²⁴. For this reason, it welcomes hundreds of climbers each year from all over the world, especially when a climbing festival is held.

Mobile phone applications to inform and support hikers have been developed for many of the islands with noteworthy footpath networks.

Image 6: Map of Andros footpaths



Source: Anavasi Publishers

Image 7: Special sign post marking Sifnos footpaths



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

²¹ <https://www.androsroutes.gr/>

²² <https://sifnostrails.com/>

²³ <https://www.tinostrails.gr/>

²⁴ https://www.topoguide.gr/islands/dodekanisa/advs_kalymnos/kalymnos_climbing_en.php

5.4 Development of cycle paths and services

Image 8: Bicycle touring led by the CIVINET network in Aegina



Source: CIVINET Greece-Cyprus

Indicative cases: Agistri, Aegina, Kea, Corfu, Kythira, Kos, Leros, Limnos, Poros, Rhodes, Samos, Sifnos, Skiathos, Syros, Chios

Kos²⁵ is widely known in Greece as the 'bicycle island'. The island has a number of services and infrastructure to support cyclists, such as cycle paths and bike lanes, ability to rent bicycles and areas set aside exclusively for parking bikes. Specifically, it has a total of 12.3 km of cycle paths, and is in first place amongst Greek islands with the longest cycle paths. There are 6 500 bicycles available for rental on the island²⁶. Kos has a particularly well-developed bicycle culture, where the bicycle is a mode of transport that is part of the daily life of both permanent residents and visitors to the island. The island is also a member of the 'Bike Friendly Destinations' network in Greece. This network consists of a number of selected municipalities, including the islands of Skiathos, Chios and Leros, which stand out for their dedication to serving cyclist-tourists.

²⁵ The third-largest island of the Dodecanese with a population of 33 388 residents (2011 census) and an area of 295.3 km².

²⁶ <https://www.bikehotels.travel/bike-municipalities/dimos-ko/>

Rhodes and Poros also have a shared bicycle system. Alternatively or in addition to these systems, almost all Greek islands have bike rental businesses, as well as tourist accommodations that rent or provide free bicycles for the use of their guests. On some islands, there also businesses that offer bike tours over paved or dirt routes, now mostly using electric bicycles (e.g. Kea).

Aside from the 'bicycle friendly islands' certified by a private body, there is also a network of 'bicycle friendly hotels'²⁷ gradually spreading throughout Greece (islands and mainland).

²⁷ <https://www.bikehotels.travel/>

Image 9: Group of tourists with bicycles on the island of Agistri



Source: <https://bit.ly/30gfQES>

On islands such as Aegina, Poros, Spetses and Agistri, touring by bicycle or taking a cycling holiday is quite common, since though they do not have suitable infrastructure and services, they have a mild terrain with routes that are accessible to inexperienced riders.

Image 10: Urban bicycle paths in Kos



Source: <https://bit.ly/30nAwL9>

One significant disadvantage for the Greek islands is that the European Eurovelo network of cycle paths does not yet go through them.

5.5 Modern zero-emission public transport

Indicative examples: Rethymno, Herakleion, Tilos, Andros

The Municipality of Rethymno was the first municipality in Greece to procure and deploy on a permanent basis an electric mini-bus, through the European CIVITAS Destinations project²⁸, to serve those moving around the old city.

Through the Interreg Greece-Cyprus programme, Herakleion in Crete acquired a park & ride service with electric mini-buses. Citizens can park their cars in the port parking area or the Pankritio Stadium for free and then board the municipality's electric mini-buses to continue their trip into the centre of town.

Image 11: The electric mini-bus in Rethymno



Source: <https://mietsel.gr/>

²⁸ <https://civitas.eu/projects/destinations>

5.7 Mobility solutions for pedestrianised settlements with stairs

Indicative example: Santorini

The unique relief of the volcanic island of Santorini²⁹ brings particular challenges to mobility, as there are great variations in altitude that make walking extremely difficult. To address this problem, particularly where serving cruise passengers visiting the island in large numbers is concerned, the Santorini cable car was built in 1982³⁰. It carries a total of 1,200 people per hour and is made by the Doppelmayr company according to Austrian specifications. It uses the old and difficult-to-reach port of Fira and carries out transfers to and from the town of Fira. The trip goes to a height of 220 metres above sea level and lasts 3 minutes. Revenue from the cable car is given to the Municipality of Santorini for public benefit projects.

Other solutions that could be applied to pedestrianised island settlements with steps are:

- placement of movable ramps (the construction of concrete ones is prohibited on traditional paths) for easier use by conventional or electric wheelchairs and micromobility vehicles
- installation of fixed, small-scale, mechanical lifting systems (vertical lifts, inclined lifts, escalators)
- creating peripheral roads (even narrow ones, where possible) so that people can access the top or various elevations of the settlement using a small electric form of transport

Image 15: The Santorini cable car



Source: <https://www.welcomepickups.com/santorini/old-port-cruise-to-fira/>

²⁹ Santorini is an island of the Region of South Aegean and belongs to the Regional Unit of the Cyclades. It has a population of 15,250 residents (2011 census) and an area of 76.19 km².

³⁰ https://www.scc.gr/cablecar_gr.htm

Images 16-20: Innovative solutions for settlements with high slopes or stairs which have not yet been implemented on Greek islands



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



Source: <https://betterfutureawards.com/BER22/default.asp>



Source: <https://www.kapountalis.com/>



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



Source: <https://extranet.who.int/agefriendlyworld/>

5.8 Promoting electromobility

Indicative examples: Astypalaia, Chalki, Kythnos, Tilos, Tinos, Mykonos, Nisyros

The islands of Astypalaia and Chalki are testing electromobility applications through funding programmes offered by the auto manufacturers. Both islands are relatively small – 1,337 residents in Astypalaia and 478 in Chalki – but with significant tourism during the summer. Interventions are mainly focused on electrification of public sector vehicle fleets, by providing electric vehicles with zero emissions to replace older vehicles, while also created charging stations supplied with power generated by renewable energy sources.

Specifically, in Astypalaia in 2020, the Greek government signed a Memorandum of Cooperation with the Volkswagen Group to implement the project 'Astypalaia: Smart and Sustainable Island', with the aim of achieving climate-neutral mobility on the island. The project focuses on four pillars: i) Electromobility, ii) Smart mobility, iii) Charging and energy from renewable energy sources, and iv) Autonomous driving as a future option. Public service vehicles are replaced by electric vehicles, and financial incentives are offered to residents to replace their own cars with electric ones. Additionally, electric vehicle chargers have been installed at key hubs on the island. Public transport by bus (which was limited to two buses operating in a small area of the island) was converted into an on-demand service with electric buses. Lastly, some rental cars will be used to develop a car sharing system, allowing residents and visitors to the island to access motor vehicles at any time without relying on privately owned cars.

A similar Memorandum of Cooperation was signed in Chalki in 2021 between the Greek government, and Greek and French companies to implement actions aimed at green mobility. These include providing purely electric vehicles which will enhance the fleets of the police, port authority and municipality, with the parallel installation of electric vehicle chargers in the island's port.

Tilos, known worldwide for the Tilos Project, has emerged as a pioneer with its policies on environmental protection. After energy-autonomous bus stops for municipal transport with solar panels, energy-autonomous municipal lighting and two energy-autonomous charging stations, it is moving to electromobility with the aim of ultimately replacing all

Image 21: Electric microcars on the island of Chalki



Source: <https://bit.ly/45kj29z>

Image 22: Touring service of the Tinos sights using an electric Tuk Tuk



Source: <https://bit.ly/3rUGKut>

municipal vehicles with electric ones. The municipality has already received one electric passenger vehicle, for its own departmental needs, and plans to get one more electric city bus, an electric microvehicle with a cart and an electric four-wheel vehicle with an open tipping hopper on the back.

A private entrepreneur in Tinos and Mykonos has developed a touring service using electric Tuk Tuk vehicles.

In the old city of Rhodes, mobility services are available for persons with disabilities using small electric vehicles and wheelchairs.

The Municipality of Nisyros³¹ uses two Goupil-type electric vehicles and five electric three-wheelers to collect waste from recycling bins placed in the pedestrianised area of the Mandraki settlement, which conventional vehicles cannot access.

Image 23: Touring service for persons with disabilities through the old city and port of Rhodes with an electric wheelchair



Source: <https://bit.ly/3KxZHcL>

Image 24: Electric municipal vehicle in Tilos



Source: <https://www.tilos.gr/>

³¹ Nisyros is an island of the Dodecanese with a population of 1,008 residents (2011 census) and an area of 50.06 km²

5.9 Carpooling

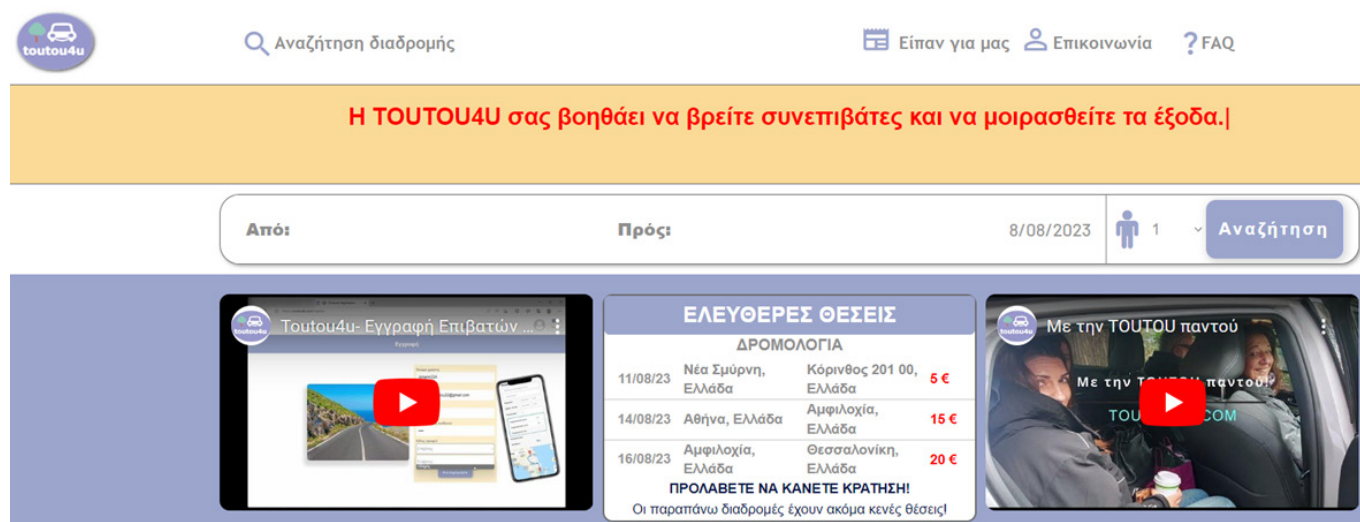
Carpooling either by prior arrangement amongst residents or using the old-fashioned hitchhiking method is an established practice on many islands, particularly those where either there is no public transport during winter, or where distances are great and the cost of having a car is prohibitive.

Modern technology allows people to use special computer or mobile phone applications to 'coordinate' the movements of those who must use a car for a journey with those who want to make the same trip or part of it so they can split the cost, on one hand, and to accommodate people who have no car and keep them

from being isolated in their village. The car driver enters the journey and time to set off on the digital platform and those who want to travel at about the same time along the same route can fill the empty seats in the car.

Such applications have functioned on an amateur level or experimentally in Greece, mainly for long-distance travel between cities, while abroad they are also used within urban centres.

Image 25: Smart carpooling application



The screenshot shows the toutou4u application interface. At the top, there is a navigation bar with the toutou4u logo, a search bar labeled "Αναζήτηση διαδρομής", and links for "Είπαν για μας", "Επικοινωνία", and "FAQ". Below the navigation bar is a yellow banner with the text "Η ΤΟΥΤΟΥ4U σας βοηθάει να βρείτε συνεπιβάτες και να μοιραστείτε τα έξοδα." The main interface features a search bar with "Από:" and "Προς:" fields, a date field set to "8/08/2023", a person icon with "1", and a "Αναζήτηση" button. Below the search bar is a grid of content: a video player on the left, a table of available routes in the center, and another video player on the right.

ΕΛΕΥΘΕΡΕΣ ΘΕΣΕΙΣ			
ΔΡΟΜΟΛΟΓΙΑ			
11/08/23	Νέα Σμύρνη, Ελλάδα	Κόρινθος 201 00, Ελλάδα	5 €
14/08/23	Αθήνα, Ελλάδα	Αμφιλοχία, Ελλάδα	15 €
16/08/23	Αμφιλοχία, Ελλάδα	Θεσσαλονίκη, Ελλάδα	20 €

ΠΡΟΛΑΒΕΤΕ ΝΑ ΚΑΝΕΤΕ ΚΡΑΤΗΣΗ!
Οι παραπάνω διαδρομές έχουν ακόμα κενές θέσεις!

Source: <https://toutou4u.com/>

5.10 Sea transport around the island perimeter

Indicative examples: Symi, Sfakia, Hydra, Amorgos, Ikaria, Karpathos, Kalymnos, Naxos and the Small Cyclades

Many Greek islands have more than one port where the regular shipping line makes a stop (Amorgos, Ikaria, Karpathos). The connection between two ports on the same island is useful sometimes for travelling within the island which for various reasons cannot be done by road, or it is preferable not to go by road.

Similarly, in groups of islands belonging to same municipality (Naxos and the Small Cyclades, the islands of the Municipality of Kalymnos), travel between these

islands is facilitated by sea transport using local boats and not just coastal shipping vessels.

On islands where the road network does not connect all settlements and the main beaches on the island (Symi, Hydra), there are sea transport services using water taxis and speed boats for sea excursions. Similar connections can be found between islands which are a short distance apart (e.g. Aegina-Agistri).

Image 26: Tour of Symi beaches by sea



Πηγή: <https://falirakisealines.com/>

5.11 Holidays combining boats and electric bicycles

Indicative example: Kea

One interesting example of a small-scale, sustainable 'cruise' which has been implemented on Greek islands by a German tourist enterprise is 'island hopping' using wooden sailing boats, which carry electric bicycles on board that the passengers can use on the islands they sail to.

In this way, both the trip from island to island and moving around the island interior can be achieved in a most sustainable and effective manner.

Image 27: Small-scale cruise service with sailing boats and electric bicycles



Source: <https://www.inselhuepfen.com/en/cycling-tours/greece>

5.12 Mobility-as-a-Service (MaaS)

Mobility as a Service' is an innovative scheme that aims to offer travellers seamless mobility and easy access to a number of mobility services based on their individual needs and preferences.










For such a service to work, transport providers and other stakeholders gather together under the integrated MaaS platform and offer their services to end users (Hietanen, 2014; Kamargianni and Matyas, 2017). Through a mobile phone application, passengers can receive information and customised recommendations about available mobility services in real time, as well as buy mobility packages that combine various modes of transport, just as they buy mobile telephony packages. Customised mobility packages could be designed for visitors to an island, offering access to mobility solutions for different periods of time (by day, three-day, weekly), as seen on the MaaS packages designed for visitors to Budapest as part of the MaaS4EU research programme (see Image 28).

A key condition for implementing Mobility as a Service is the existence of alternative means of transport

(excluding private cars and mass transport), and securing cooperation amongst stakeholders (public and private transport operators, public authorities, etc.) under the umbrella of the single platform (Polydoropoulou et al., 2020a, 2020b).

At island level, MaaS could be introduced to provide permanent residents and visitors integrated mobility packages, which include trips within the island for the length of their stay (using services such as public transport, shared bicycles, scooters, etc.) and their access to them, including transport services by boat and airplane (MaaS Scotland, 2018; Papaioannou et al., 2022). In implementing MaaS facilities on the islands, local organisations must play an important role; this includes public authorities, which must embrace the new service, and local transport operators and travel agents, who must work with one another and with the MaaS platform provider. Lastly, the participation of tourism-related bodies could add value to MaaS packages, offering services not related to mobility (such as tickets to tourist events, coupons for restaurants, etc.).

Image 28: Mobility packages for visitors to Budapest

Daily Sharing	3-day Combo	7-day Sharing XL
 Budapest 24-hour travelcard + 1 hr car sharing  + MOL Bubi weekly ticket 	 Budapest 24-hour travelcard + 7000 Ft for your taxi trips  + MOL Bubi weekly ticket 	 Budapest 24-hour travelcard + 2 hrs car sharing  + MOL Bubi weekly ticket 
6,450 HUF/week	11,150 HUF/week	13,750 HUF/week

Source: report by Pagoni et al. (2020), processed by TRANSD-DEM

5.13 Mobile phone applications

Smartphone applications can contribute to sustainable mobility by providing the following services (indicatively):

- Information about mobility systems and services: By using such an application, travellers can obtain information in real time about anything related to mobility on the island, such as bus schedules, boat and airplane arrivals/departures, telephone numbers for taxis, cycle paths, footpaths, shared bicycle stations, car rental agencies, charging points, parking areas, car repair garages, petrol stations, etc.
- Customised touring via routes of tourist interest: By using such an application, users can receive information in real time about the sights on an island at the instant they are passing by them. Specifically, there are applications that can support hikers about the tour they will take over the island's footpath system, providing specific details about the nature of the route, while helping them stay on the trail³².
- Change in mobility behaviour: There are numerous applications on the market based on monitoring individuals' activities and promoting environmental habits (such as fostering an environmental and ecological consciousness, promoting physical activity, etc.). In the transport sector, similar applications³³ have been developed to promote sustainable mobility through a reward system offering travellers points when they use sustainable modes of travel, such as a bicycle or walking. The points that travellers accrue can be redeemed for services cooperating with the reward system, such as restaurants and events. Implementing such a practice in insular areas would include cooperation of transport operators with tourist and other local bodies to redeem the points. Current literature has shown that such strategies are effective in changing individuals' behaviour as regards sustainable travel³⁴.

³² https://www.topoguide.gr/apps/topoguide_apps.php

³³ Examples: <https://www.ciclogreen.com/>, <https://www.betterpoints.ltd/>, <https://www.pinbike.it/>

³⁴ Casquero et al., 2022; Tsimpa et al., 2019, Sunio and Schmöcker, 2017

Image 29: Smartphone app for touring Aegina

Aegina topoguide

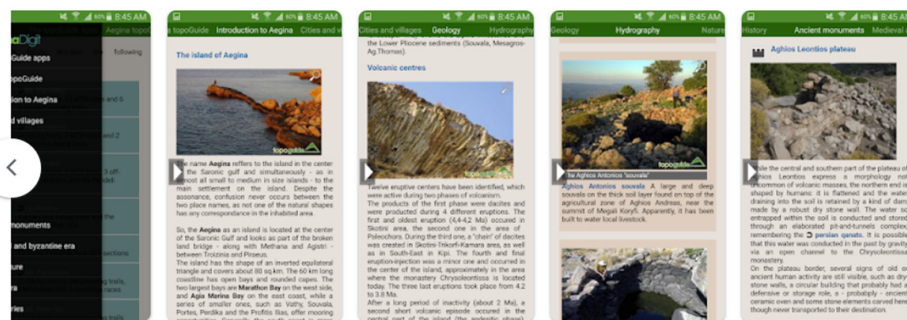
AnaDigit

50+ Downloads

PEGI 3

Install on more devices

This app is available for some of your devices



Source: <https://topoguide.gr/index.php>

SECTION 6: Noteworthy projects and research on island mobility

Sustainable Island Mobility is a timely issue that requires integrated analysis and understanding, as the coexistence of residents and visitors in harmony with the environment is particularly complex and critical to the sustainability of island communities. This section presents relevant literature addressing various aspects of sustainable mobility on islands.

The topics of the works that follow discuss the role of tourism as a driving force for local growth, but also the potential impacts on sustainability and the various facets of insularity and sustainability with an emphasis on the Aegean islands, while offering multi-dimensional analyses of the challenges that these islands face. Additionally, studies that focus on European islands are presented, identifying challenges and opportunities for sustainable mobility.

TOURISTS, RESIDENTS, AND SUSTAINABLE MOBILITY IN ISLANDS: THE CASE OF ISCHIA (ITALY)

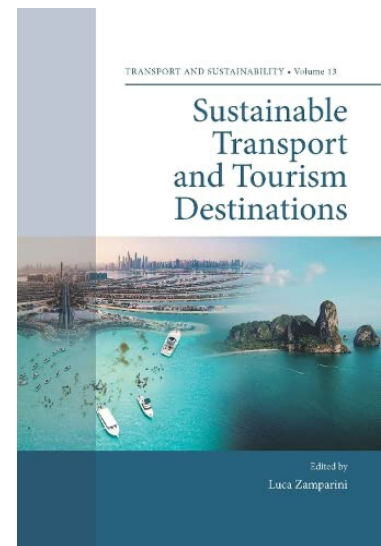
Authors: Maltese, I., Zamparini, L. and Amico, C.

Year: 2021

Publisher: Emerald Publishing Limited

Included in the volume: Zamparini, L. (Ed.) Sustainable Transport and Tourism Destinations (Transport and Sustainability, Vol. 13), pp. 97-115.

While tourism is mostly considered a crucial driver for local development, its impact in terms of sustainability and attractiveness of local destinations must also be taken into account. This is especially true for small islands, where tourism may determine detrimental effects in the long term to the limited space and resources. The “sustainable tourism” approach considers this phenomenon and proposes possible solutions to problems such as the loss of public space, waste management, energy and water over-consumption, traffic congestion, air, water, and visual pollution. This chapter presents and discusses the results of a survey that has been carried out in Ischia, a small Mediterranean island located in the Gulf of Naples in order to explore the propensity toward sustainable mobility of both tourists and residents. In particular, the mobility patterns of the respondents have been deeply investigated both at home (domestic behavior) and on holiday (tourist behavior). The results suggest that the promotion of a higher level of cooperation among different stakeholders and local governments is of paramount importance in order to achieve sustainable tourism on islands. This may also generate important effects in terms of destination attractiveness.



ΝΗΣΙΩΤΙΚΟΤΗΤΑ ΚΑΙ ΒΙΩΣΙΜΟΤΗΤΑ [INSULARITY AND SUSTAINABILITY]: Η ΠΕΡΙΠΤΩΣΗ ΤΩΝ ΝΗΣΙΩΝ ΤΟΥ ΑΙΓΑΙΟΥ [THE CASE OF THE AEGEAN ISLANDS]

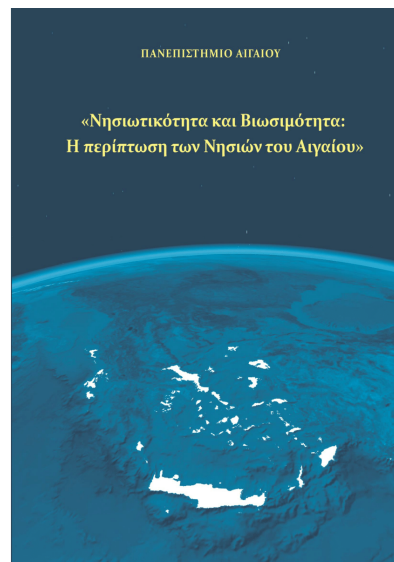
Authors: Spilanis, I. Kizos, Th. & Karampela, S. (edit.)

Year: 2015

Publisher: University of the Aegean

This collection of articles discuss the ‘actual’ and the ‘symbolic’ features of Greek islands, and particularly those in the Aegean Sea. The texts examine processes and analyses focusing on the causes behind the change or the dimensions of phenomena. The topics covered include:

- a) ‘Topikes Koininies [Local Communities]’, which examines many different aspects of the communities of the Aegean islands and their economies;
- b) ‘Politismos [Culture]’, which discusses various aspects of the islands’ history and culture;
- c) ‘Fysiko Perivallon [Natural Environment]’, concerning the environment of the islands and its interaction with the people there.



ΕΥΡΩΠΑΪΚΑ ΝΗΣΙΑ ΚΑΙ ΠΟΛΙΤΙΚΗ ΣΥΝΟΧΗ [EUROPEAN ISLANDS AND COHESION POLICY]

Authors: Spilanis, I.

Year: 2012

Publisher: Gutenberg - Giorgos & Kostas Dardanos

The aim of this study is to conduct a targeted analysis, deliver a reference work and set of policy recommendations and strategic guidance to foster the sustainable development of European islands within the framework of the Single Market, ensuring equal terms and opportunities with other non-handicapped regions.’



ΓΙΑΝΝΗΣ ΣΠΙΛΑΝΗΣ
**ΕΥΡΩΠΑΪΚΑ ΝΗΣΙΑ
ΚΑΙ ΠΟΛΙΤΙΚΗ ΣΥΝΟΧΗ**

Η ΑΝΑΠΤΥΞΗ ΤΩΝ ΝΗΣΙΩΝ:
Ποια στρατηγική και ποιες πολιτικές
για την επίτευξη εδαφικής σύγκλισης

GUTENBERG

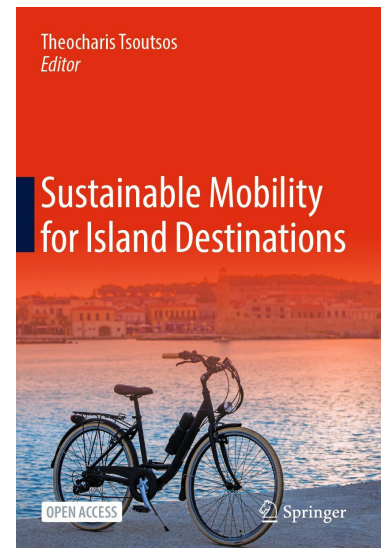
SUSTAINABLE MOBILITY FOR ISLAND DESTINATIONS

Authors: Theodoris Tsoutsos et al.

Year: 2022

Publisher: Springer

The book presents the findings of the CIVITAS DESTINATIONS project regarding mobility in island tourism areas, highlighting the challenges and opportunities that tourist destinations face in becoming more sustainable. It also presents sustainable mobility policies which have been implemented on various island tourist destinations in Europe (such as Rethymno-Crete, Valletta-Malta, Madeira, etc.).



A SUSTAINABLE TRANSPORT POLICY FOR TOURISM ON SMALL ISLANDS: A CASE STUDY OF MALTA

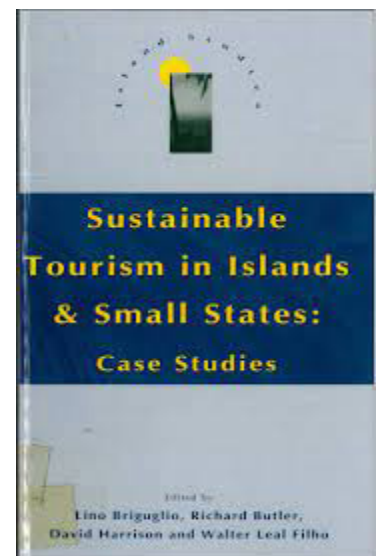
Authors: Robbins, D.

Year: 1996

Publisher: Pinter Publishers

Included in the volume: L. Briguglio, B. Archer, J. Jafari, & G. Wall, (Eds.), Sustainable tourism in islands and small states: case studies (pp. 180-198).

It describes the important role of public transport in sustainable tourism development. The findings are the result of a survey conducted during eight visits to Malta over a period of four years. The author carried out a number of in-depth interviews with senior management of the Public Transport Authority. The study was supplemented with observational techniques along routes with marked tourist traffic to verify the effectiveness of existing operating policies. When indicated, it recommends alternative good practices from other countries for operating buses



FROM SUSTAINABLE URBAN MOBILITY PLANS TO SUSTAINABLE ISLAND MOBILITY PLANS – SUSTAINABLE MOBILITY POLICIES IN ISLAND CITIES

Authors: Bakogiannis, E., Kyriakidis, C. & Siti, M. Christopoulos, K.

Year: 2018

The presentation took place at the 'International Conference on Traffic and Transport Engineering (ICTTE)', Belgrade, Serbia, 27-28 September 2018.

Presentation of policies at island municipalities to improve the sustainability of island mobility. Specifically, the work recommends measures and strategies for managing traffic and the road network, equal mobility for vulnerable users, transport infrastructure, and spatial and urban planning.



SUSTAINABLE MOBILITY AND TRANSPORT WITHIN ISLANDS: GUIDELINES FOR FUTURE DEVELOPMENT IN THE CASE OF THE CANARY ISLANDS

Authors: Franesqui García, M. Á., Yepes Temiño, J., & García-González, C.

Year: 2002

Publisher: Revista de Obras Publicas

The Strategic Economic and Social Plan for Gran Canaria warns of the dangers of transport monopolies and proposes certain efficient measures such as: the suitable control of subvention policy; the promotion of more environmentally friendly means of transport using alternative energy; the establishment of incentives for collective transport; improved access to public transport; a revision of the current concessionary system and the integration of the diverse modes of transport and their tariffs.



TOURISM AND MOBILITY IN THE MEDITERRANEAN. SUSTAINABLE MOBILITY SOLUTIONS FOR A GREENER & RESPECTFUL EXPERIENCE LIVING IN AND VISITING THE MEDITERRANEAN

Authors: Albert Arias and others, εκ μέρους των MedCities και POLIS Network

Year: 2022

Publisher: The Urban Transports Community (Interreg MED)

This policy brief aims to set the basis for building a common agenda for designing transport in the tourist areas of the Mediterranean by identifying the main trends, challenges and goals regarding tourism mobility. It also highlights a broad agenda of political recommendations at the local, regional, state and EU level. Finally, some relevant good practices from the Interreg MED Urban Transports Community are presented.



PROMOTING SOFT MOBILITY IN THE MEDITERRANEAN: TOWARDS MORE SUSTAINABLE MOBILITY SYSTEMS

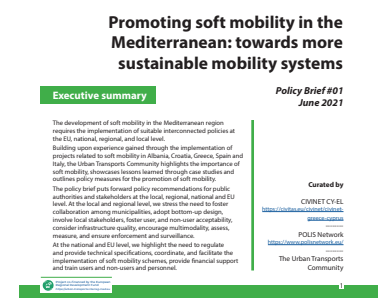
Authors: Christos Gioldasis, Zoe Christoforou, Kosmas Anagnostopoulos et al, on behalf of CIVINET Greece-Cyprus και POLIS Network

Year: 2021

Publisher: The Urban Transports Community (Interreg MED)

This policy brief puts forward policy recommendations to promote soft mobility aimed at public authorities and stakeholders at the local, regional, national and EU level. At the local and regional level, it stresses the need to foster collaboration among municipalities, involve local stakeholders, study and assess infrastructure quality, encourage multimodality, and ensure enforcement and surveillance

of legislation. At the national and EU level, it highlights the need to regulate and provide technical specifications, coordinate, and facilitate the implementation of soft mobility schemes, provide financial support and training.



INNOVATIVE URBAN MOBILITY SOLUTIONS IN TOURIST DESTINATIONS

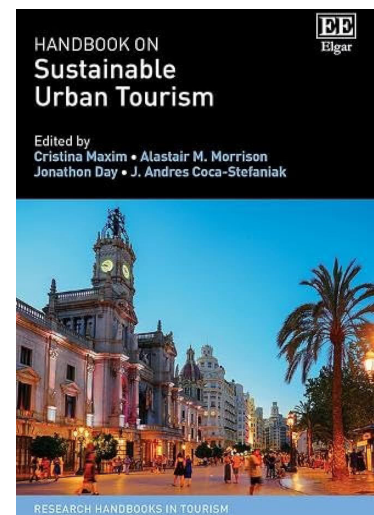
Authors: Pagoni, I., Papatheodorou, A.

Year: 2024

Publisher: Edward Elgar Publishing

Included in this collection: C. Maxim, A.M. Morrison, J. Day, J.A. Coca-Stefaniak, (Eds.),
Handbook on Sustainable Urban Tourism (p. 191-205)

This chapter presents a review of innovative urban mobility solutions that are currently implemented in several tourism destinations, identifying the main factors affecting their adoption in tourism mobility. Focusing on sustainable solutions, the implementation of sharing schemes that promote active urban mobility (for example, bike-sharing, e-scooters, etc.) and Mobility as a Service (MaaS) are presented and discussed. The review provides useful insights for policy makers and transport operators that wish to provide smart and sustainable mobility options to tourists.



SECTION 7: References and data sources

References

Casquero, D., Monzon, A., García, M., & Martinez, O. (2022). Key elements of mobility apps for improving urban travel patterns: A literature review. *Future transportation*, 2(1), 1-23.

Dianeosis (2021). Shaping the strategic development of tourist ports. Available on the website: https://www.dianeosis.org/wp-content/uploads/2021/11/Meleti_Marines.pdf

Elafros Yannis. (2018). Islands seek sustainable mobility. *Ekathimerini*, Accessed 20 June 2020 through: <https://www.ekathimerini.com/news/232027/islands-seek-sustainable-mobility/>

Hietanen, S. (2014). 'Mobility as a Service' – the New Transport Model? *Eurotransport*, 12 (2) ITS & Transport Management Supplement, 2-4.

Høyer, K.G. (2000) Sustainable Tourism or Sustainable Mobility? The Norwegian Case, *Journal of Sustainable Tourism*, 8:2, 147-160, DOI: 10.1080/09669580008667354

Kamargianni, M., Matyas, M. (2017). The Business Ecosystem of Mobility-as-a-Service. 96th Transportation Research Board (TRB) Annual Meeting. Washington DC, 8-12 January 2017.

Local regulatory decision to organise traffic flow on the island of Spetses, Resolution no. 222/2012 with amendment nos. 68/2013 and 64/2014 by the Spetses Town Council. Accessed 23 July 2023. <https://spetses.gov.gr/kanonismos-kykloforiakoy/>

Maas, S., & Attard, M. (2022). Policies to promote cycling in Southern European island cities: challenges and solutions from three 'starter' cycling cities. *Transportation research procedia*, 60, 52-59.

MaaS Scotland (2018). Mobility as a Service: Positioning Scotland for an Emerging Global Market. Available at the website (Accessed 3 July 2022): https://maas-alliance.eu/wp-content/uploads/2018/02/MaaS-Positioning-Scotland-for-an-Emerging-Global-Market_PUBLIC.pdf

Pagoni, I., Tsimrimpa, A., Polydoropoulou, A., Tsouros, I., Kioussi, V., Gatto, M. (2020). D3.6 - Prototype business models for MaaS – Final version. MaaS4EU Project. Available on the website: <https://cordis.europa.eu/project/id/723176/results>

Papaioannou, G., Polydoropoulou, A., Tsimrimpa, A., & Pagoni, I. (2022). Assessing the Potential of 'Mobility as a Service' in Passenger Maritime Transport. *Frontiers in Future Transportation*, 29.

Polydoropoulou, A., Pagoni, I., & Tsimrimpa, A. (2020a). Ready for Mobility as a Service? Insights from stakeholders and end-users. *Travel Behaviour and Society*, 21, 295-306.

Polydoropoulou, A., Pagoni, I., Tsimrimpa, A., Roumboutsos, A., Kamargianni, M., & Tsouros, I. (2020b). Prototype business models for Mobility-as-a-Service. *Transportation Research Part A: Policy and Practice*, 131, 149-162.

SECTION 7 - REFERENCES AND DATA SOURCES

Rupprecht Consult (editor), Guidelines for Developing and Implementing a Sustainable Urban Mobility Plan, Second Edition, 2019. Available on the website: https://urban-mobility-observatory.transport.ec.europa.eu/sustainable-urban-mobility-plans/sump-guidelines-and-decision-makers-summary_en?prefLang=el

Sunio, V., & Schmöcker, J. D. (2017). Can we promote sustainable travel behaviour through mobile apps? Evaluation and review of evidence. *International journal of sustainable transportation*, 11(8), 553-566.

Tsirimpa, A., Polydoropoulou, A., Pagoni, I., Tsouros, I. (2019). A reward-based instrument for promoting multimodality. *Transportation Research Part F: Traffic Psychology and Behaviour*, 65, 121-140.

Statutory Regional Spatial Frameworks. Accessed 23 July 2023. <https://ypen.gov.gr/chorikos-schediasmos/chorotaxia/ethniki-politiki/>

Websites

<https://www.alpine-pearls.com/en/>

Andros Routes. Accessed 23 July 2023. <https://www.androsroutes.gr/>

Astypalea: On-demand & shared mobility for an entire island, Mobility Innovation Marketplace. Accessed 23 July 2023. <https://marketplace.eiturbanmobility.eu/>

BetterPoints. Accessed 23 July 2023. <https://www.betterpoints.ltd/>

Bike Friendly. Accessed 23 July 2023. <https://www.bikehotels.travel/>

Ciclogreen, Sustainable Mobility. Accessed 23 July 2023. <https://www.ciclogreen.com/>

CIVITAS Destinations. Accessed 23 July 2023. <https://civitas.eu/projects/destinations>

Cyclopolis (2022). Cyclopolis by municipality. Accessed 20 June 2022 at the link: <http://www.cyclopolis.gr/index.php/el/cyclopolis-per-municipality>

Easybike (2022). Map showing Easybike bicycles. Accessed 20 June 2022 at the link: <http://www.easybike.gr/?lang=el>

Greece travel ideas. Accessed 23 July 2023. <https://grecetravelideas.com>

Hellenic Institute of Electric Vehicles (HELIEV) (2022) Charging stations. Accessed 20 June 2022. <https://www.heliev.gr>

Intelligent Research Infrastructure for Shipping, Supply Chain, Transport & Logistics (ENIRISST). Accessed 23 July 2023. <https://www.enirisst.gr/>

Loula and Evangelos Nomikos Foundation, Santorini Cable Car. Accessed 23 July 2023. https://www.scc.gr/index_gr.html

Pin Bike. Accessed 23 July 2023. <https://www.pin.bike/>

Sifnos Trails. Accessed 23 July 2023. <https://sifnostrails.com/el/>

Tinos Trails. Accessed 23 July 2023. <https://www.tinostrails.gr/el/>

Topoguide. Accessed 23 July 2023. <https://www.topoguide.gr/>

Travel the Greek way. Accessed 24 July 2023. <https://travelthegreekway.com>

Trail Path, Hiking tours in Greece. Accessed 23 July 2023. <https://www.trailpath.gr>

SIMPs: Islands propose a new approach to the SUMP concept. EU Urban Mobility Observatory. (2020). Accessed 20 June 2022: https://urban-mobility-observatory.transport.ec.europa.eu/resources/case-studies/simps-islands-propose-new-approach-sump-concept_en

Sustainable Island Mobility Plans (SIMPs): What they are and why Greek islands need them. Accessed 20 June 2022: https://issuu.com/anyakosmas/docs/simp_and_island_particularities

Sustainable Island Mobility Plans. Accessed 23 July 2023. <https://simp.gr/>

Williams Len. (2023). Hydra: The Greek island that banned wheels. BBC, Accessed 23 July 2023: <https://www.bbc.com/travel/article/20230108-hydra-the-greek-island-that-banned-wheels>

Video

Three-day event dedicated to circular tourism on Aegina Island. Accessed 23 July 2023: <https://www.youtube.com/watch?v=ULqMm9eLsVk>

FUNDS EU CEUTP Forum 2023. Accessed 23 July 2023: <https://www.youtube.com/watch?v=iF-y-TJp2RU>

www.civinet.gr