

# Small-medium size islands as test-beds for sustainable mobility innovations and the tool of Sustainable Island Mobility Plan (SIMP)

Alexia Spyridonidou

Kosmas Anagnostopoulos



DAFNI

Network of Sustainable Greek Islands

# What kind of islands are we talking about?



Island **Municipalities**  
with 150 - 120.000 inhabitants

**Not** Island Regions,  
Countries or Continents



Crete



UK

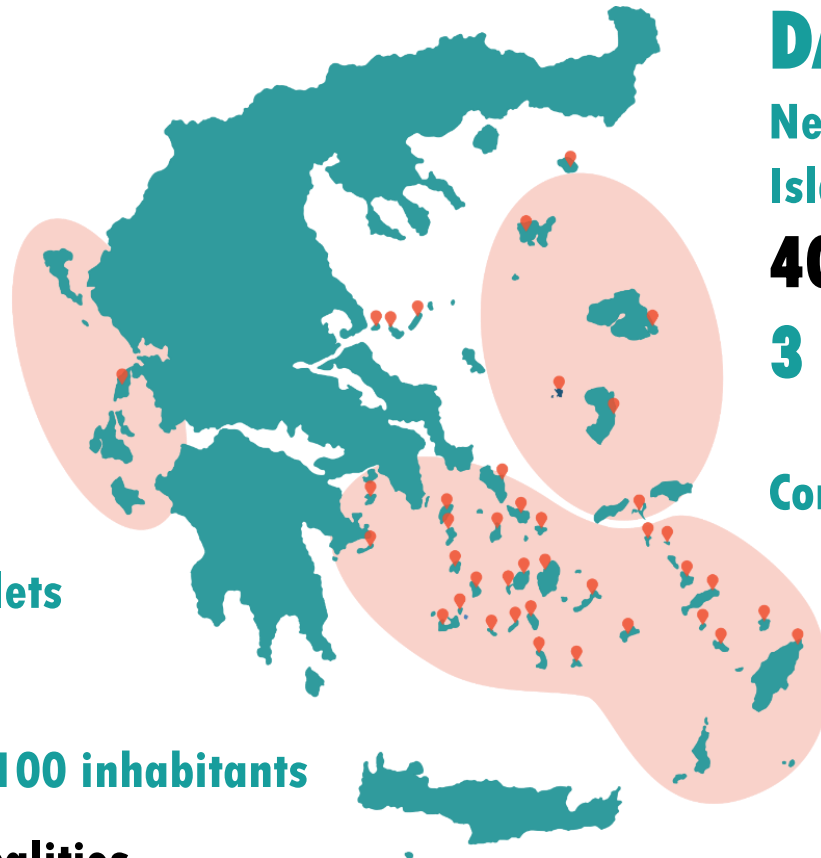


Australia

# The Greek islands and DAFNI Network

## Greece

- 6000** islands and islets
- 117** inhabited
- 79** population  $\geq$  100 inhabitants
- 65** island municipalities  
(except for Crete and Evia)
- 4** totally insular regions



## DAFNI Network

Network of Sustainable Greek Islands

**40** Island Municipalities

**3** Island Regions

Continuously expanding!



# Distinctive Island Characteristics

**High population  
Fluctuation**

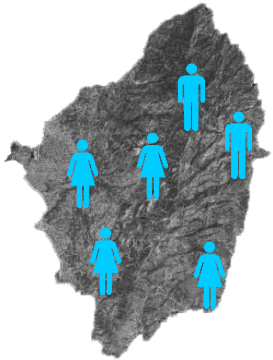
**summer =  
3 to 15 \* winter**

**Low population  
Density**

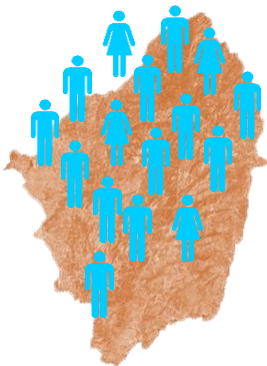
**(inhabitants/square klm)**

**Land Cover varies  
importantly among  
settlements & rural  
areas**

winter



summer



**Urban density**

=

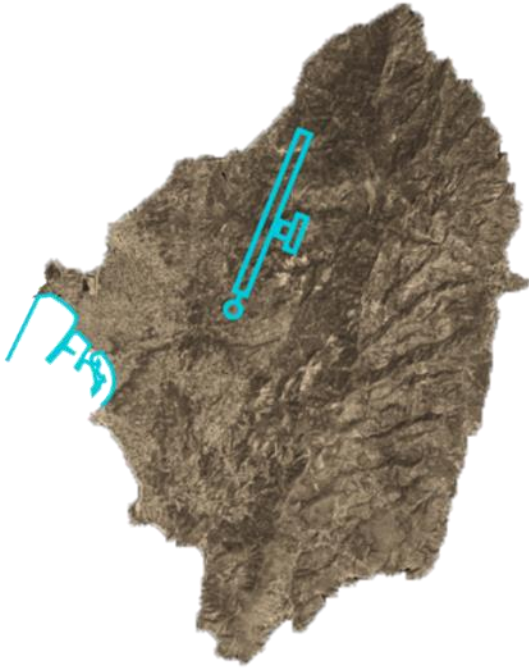
**3,5 to 56 \***

**island density**



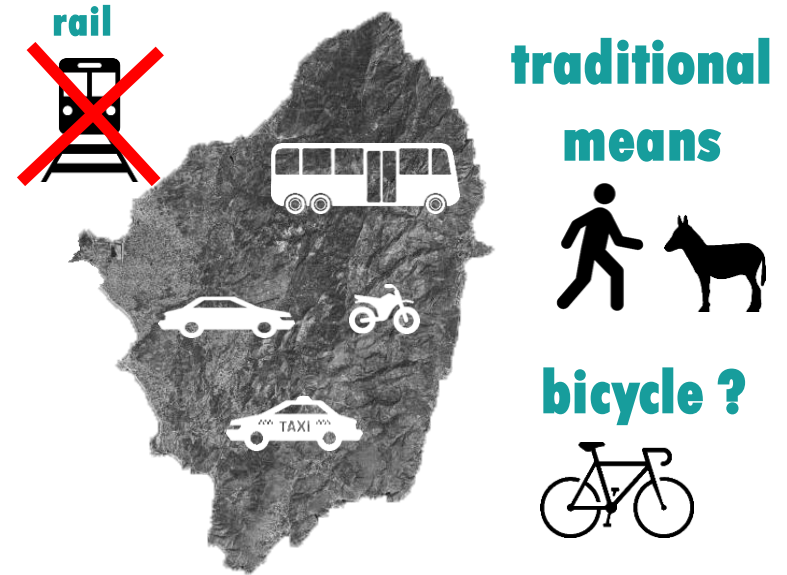
# Distinctive Island Characteristics

## External Connections



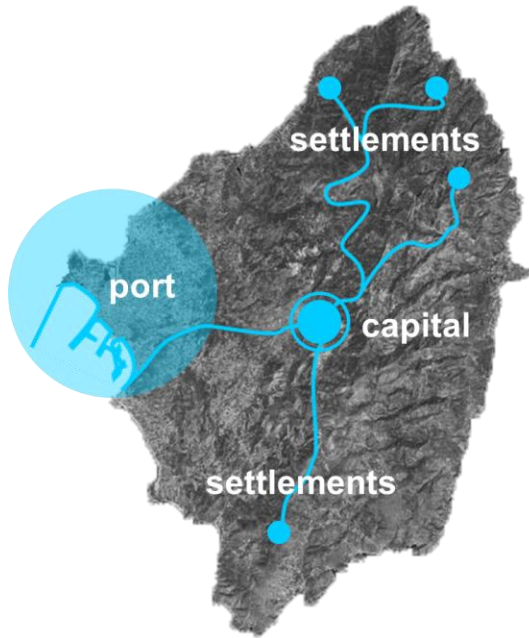
- **Road links** (never)
- **Rail connections** (never)
- **Port(s)** (always)
- **Airport(s)** (possible)

## Local Transport

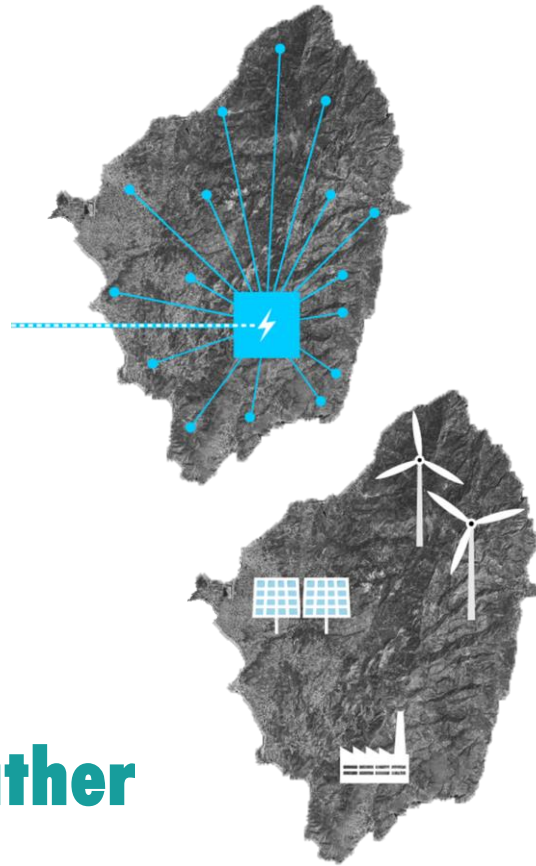


# Distinctive Island Characteristics

## Double Isolation



## Energy Isolation or Independence



## Hard Living

- Cost of Living
- Supply/variety of goods
- Education
- Medical Health
- Social Services
- Culture
- Ageing population

**Time, Value, Weather**

**other restrictions (strikes etc)**



# High Diversity Among the Islands

## **Tourism Development Models**

- **Mass tourism**
- **Medium developed tourism**
- **Eco or undeveloped tourism**

## **Population**

**150 - 120.000 inhabitants**

## **Unemployment**

**AVG 19%, min: 7%, max: 26%**

# High Diversity Among the Islands

## Urbanization Patterns

- **Sprawl**
- **Moderate Expansion of Settlements & Housing (out of settlements)**
- **Compact Settlements**

## Total area

**min: Lipsi 17 km<sup>2</sup>**

**max: Lesbos 1636 km<sup>2</sup>**

**Urban area existence ?**

**Number of Ports/ Airports ?**





# High Diversity Among the Islands

## Typology for mobility planning

**Small  
non-urban**

**Medium  
non-urban**

**Big  
non-urban**

**Santorini**

**Mykonos**

**Kefallonia**

**Small  
urban**

**Medium  
urban**

**Big  
urban**

**Syros**

**Kos**

**Rhodes**

# Main differences between SUMP and SIMP



# Main differences between SUMP and SIMP methodology

## Urban (SUMP)

## Island (SIMP)

<b>Area</b>
<b>Population</b>
<b>Needs for infrastructure</b>
<b>Gates / External Connections</b>

Urban – Suburban – Satellites

Whole island – more islands – Urban areas?

Residents + Tourists

Residents + Tourists

Heavy with fixed use

Light and flexible



numerous



limited

**General Vision**

**Car-free or Car-less City**

**Car-free Tourism**

# Main differences between SUMP and SIMP

focus

**Urban (SUMP)**

**Island (SIMP)**

**Trips**

Home-Work



Leisure

**Car**

Massive use. Need for permanent solutions



Need for flexible solutions (high VS low season)

**Public Transport**

Need for heavy, massive and stable PT



Need for light, personalized (on demand) and flexible PT

**Rail**

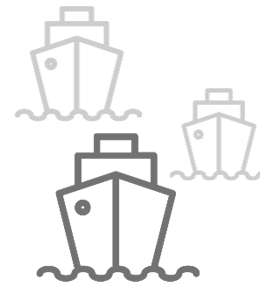
Existing or possible



Not possible

**Maritime Transport**

Not very critical, rarely developed



Very important and always existing

**Port**

In coastal cities

Always

# Main differences between SUMP and SIMP

focus

## Urban (SUMP)

## Island (SIMP)

**Walking at non urban areas**

Leisure. Not critical.

Very important touristic activity. Always existing.



**Cycling**

Mainly in the urban area

Mainly out of the urban area



**Energy**

Always integrated with the National Energy Network (On-Grid)

Not always integrated. Possible Off-Grid solutions



**Participation Engagement**

Mainly residents

Residents + Tourists



**Innovation**

Difficult and slow development of innovative ideas. Large scale.

Lighter, quicker, cheaper development of innovative ideas !

# **Sifnos SIMP**

## **The first SIMP in Europe**



# Sifno's SIMP

## Sustainable Mobility Plan

### Sifnos SIMP

### Island (SIMP)

#### Area

Whole island: 74km<sup>2</sup>

Whole island – more islands –  
Urban areas?

#### Population

Off peak: 2500  
On peak: 11200

Residents + **Tourists**

#### Needs for infrastructure

At least two main roads  
with rotating use

Light and flexible

#### Gates / External Connections

1 port



limited



# Main differences between SUMP and SIMP

focus

## Sustainable Mobility Plan

### Sifnos SIMP

### Island (SIMP)

**Car**



Increasing demand on car-rental, possibly car-sharing too

Need for flexible solutions (high VS low season)

**Public Transport**



Varying bus frequency among high & low season

Need for light, personalized (on demand) and flexible PT

**Walking at non urban areas**

Top hiking destination in Greece.

Very important touristic activity. Always existing.



**Cycling**

Not developed. High interest for e-bikes.

Mainly out of the urban area



**Energy**

Seeking of energy autonomy from RES (V2G)

Not always integrated. Possible Off-Grid solutions



# Main differences between SUMP and SIMP

focus

**Sustainable  
Mobility Plan**

**Sifnos SIMP**

**Island (SIMP)**

**Participation  
Engagement**

Use of online crowdsourcing  
& participatory planning for  
all travelers (residents &  
tourists)

Residents + Tourists



**Innovation**

Ideal island for MaaS  
implementation  
(bus, taxi, rental cars &  
motorbikes,  
future: car sharing, bike sharing)

Lighter, quicker, cheaper  
development of innovative  
ideas !

