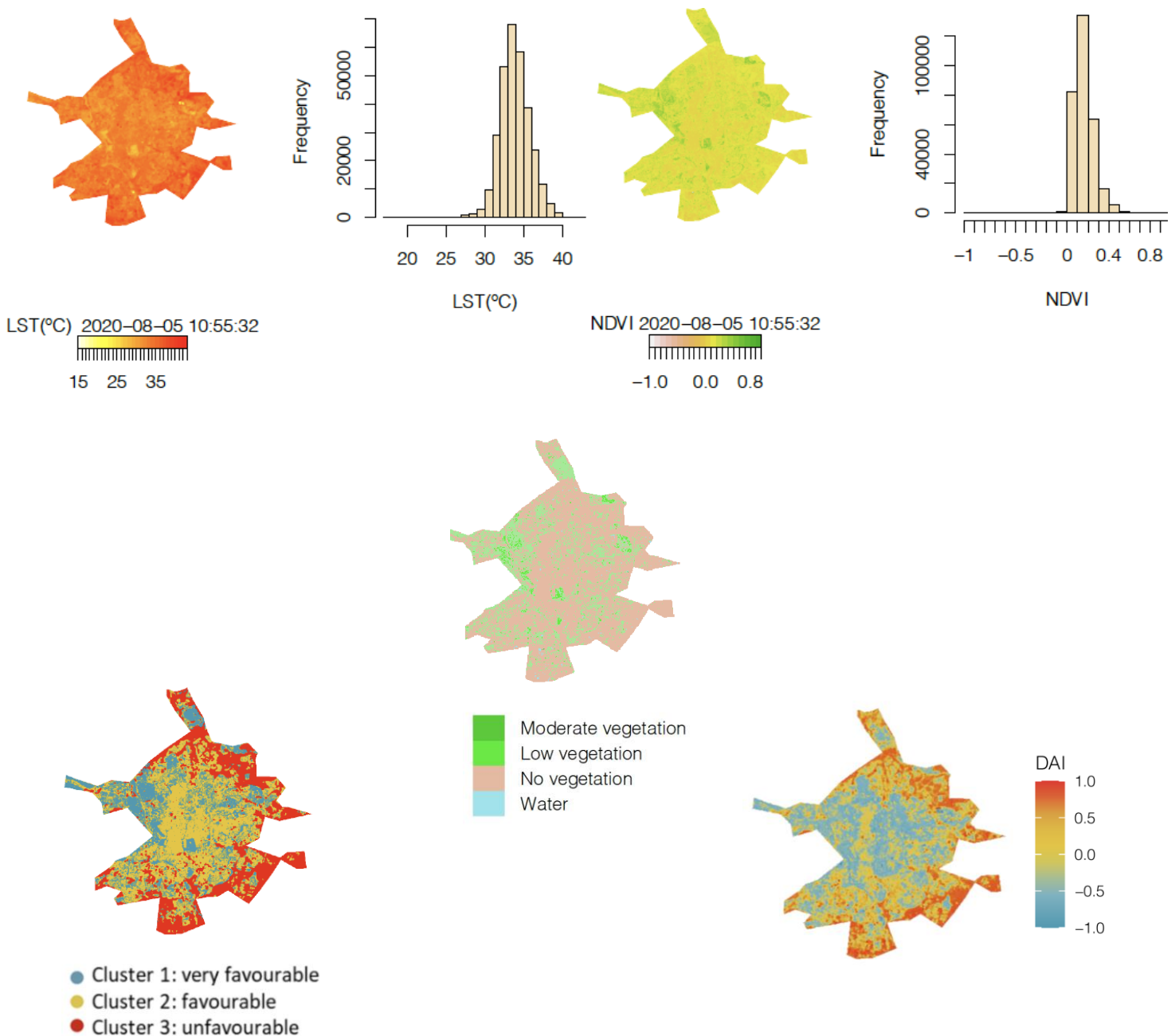


# Automatic detection of unfavourable urban areas with higher temperatures and lack of green spaces using satellite imagery

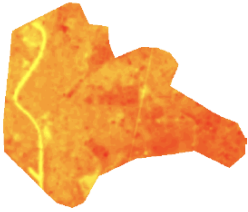
## Appendix A: Supplementary information

In this appendix, maps with the spatial distribution of land surface temperatures (LST) and Normalized Difference Vegetation Index (NDVI) are presented (up left and up right, respectively) for each city. Those maps are accompanied with an histogram showing the frequency of appearance (number of pixels in the image) of each LST or NDVI value. The categories of the different zones (middle), the clusters calculated (down left) and the values of the Disadvantaged Area Index (DAI) (down right) are also showed.

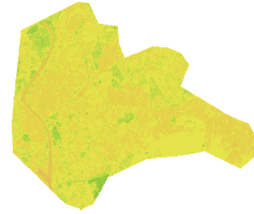
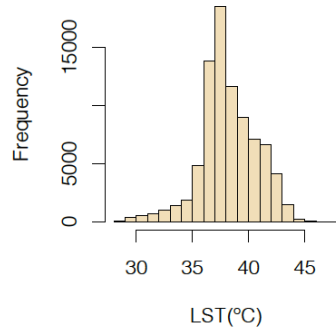
### MADRID



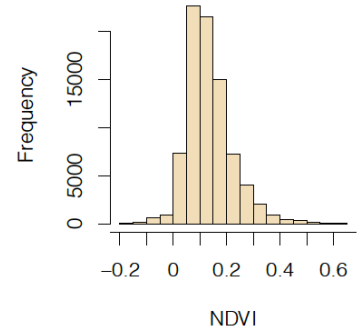
# SEVILLE



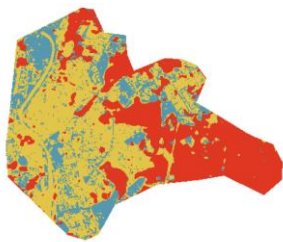
LST(°C) 2020-07-11 11:02:24  
24 32 40 48



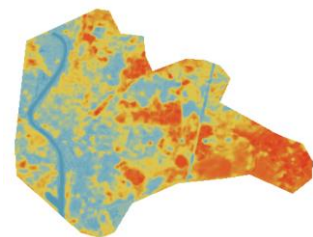
NDVI 2020-07-11 11:02:24  
-1.0 0.0 0.8



- Moderate vegetation
- Low vegetation
- No vegetation
- Water



- Cluster 1: very favourable
- Cluster 2: favourable
- Cluster 3: unfavourable

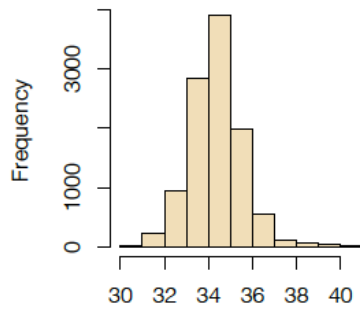


DAI  
1.0  
0.5  
0.0  
-0.5  
-1.0

# MURCIA



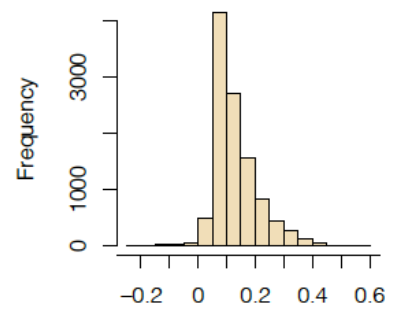
LST(°C) 2019-06-02 10:43:45  
28 33 38



LST(°C)



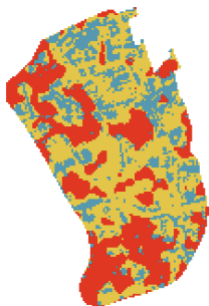
NDVI 2019-06-02 10:43:45  
-1.0 0.0 0.8



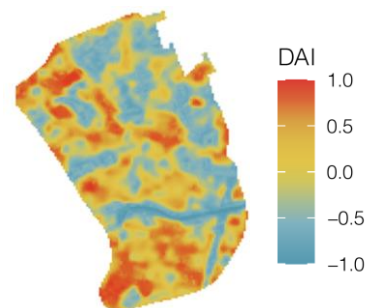
NDVI



- Moderate vegetation
- Low vegetation
- No vegetation
- Water

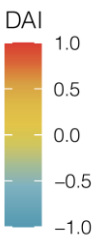
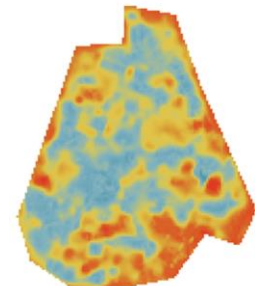
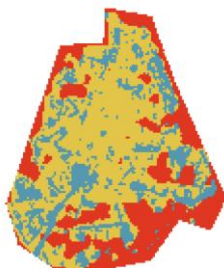
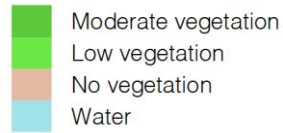
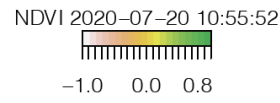
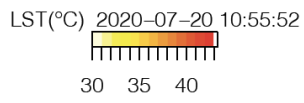
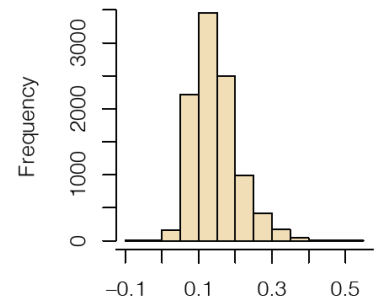
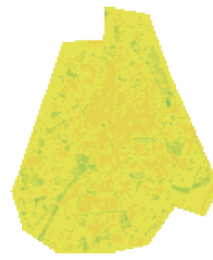
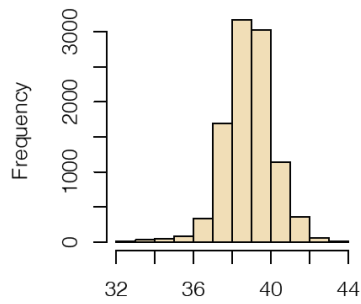
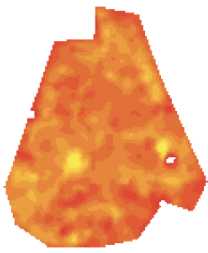


- Cluster 1: very favourable
- Cluster 2: favourable
- Cluster 3: unfavourable



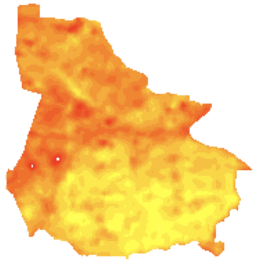
- DAI
- 1.0
- 0.5
- 0.0
- 0.5
- 1.0

# CIUDAD REAL

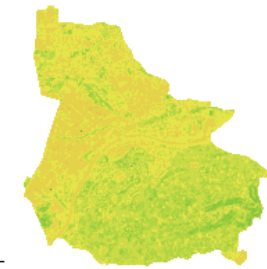
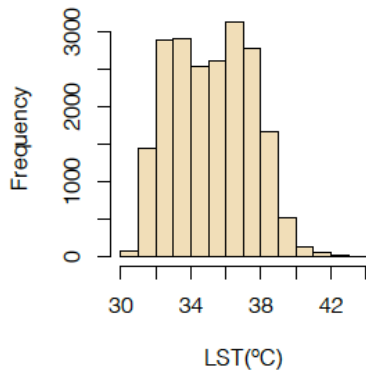


- Cluster 1: very favourable
- Cluster 2: favourable
- Cluster 3: unfavourable

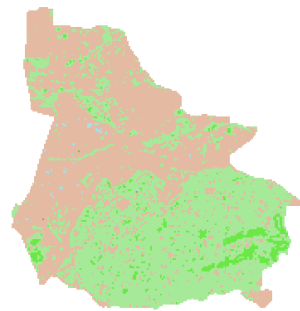
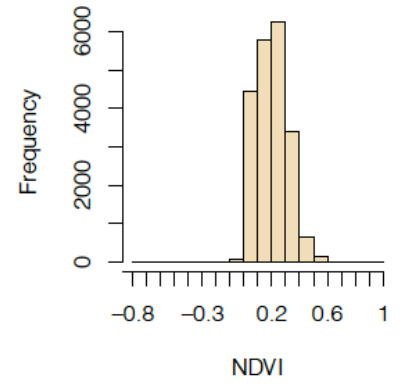
# ALCOBENDAS



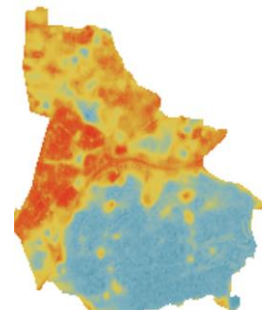
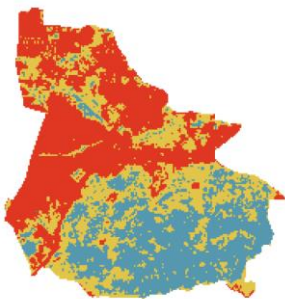
LST(°C) 2019-08-03 10:55:38  
 27 33 39



NDVI 2019-08-03 10:55:38  
 -1.0 0.0 0.8



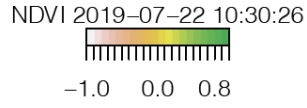
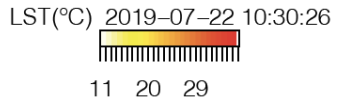
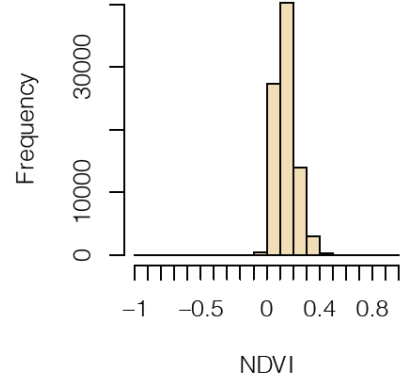
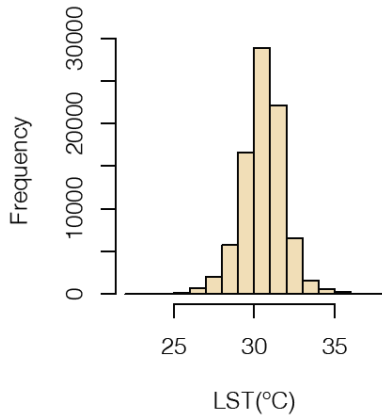
Moderate vegetation  
 Low vegetation  
 No vegetation  
 Water



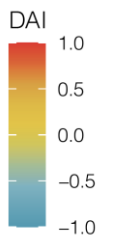
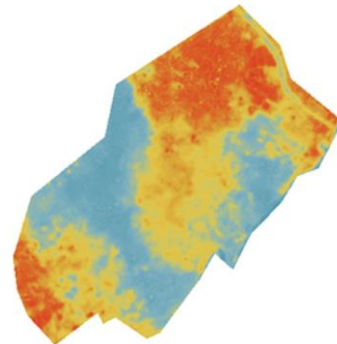
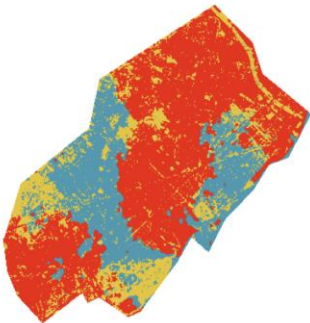
DAI  
 1.0  
 0.5  
 0.0  
 -0.5  
 -1.0

● Cluster 1: very favourable  
 ● Cluster 2: favourable  
 ● Cluster 3: unfavourable

# BARCELONA

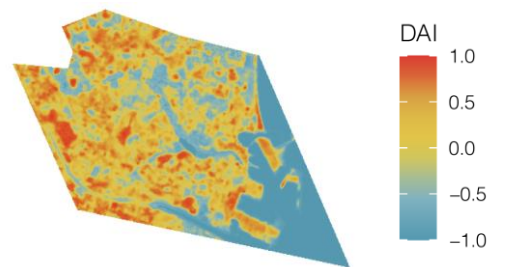
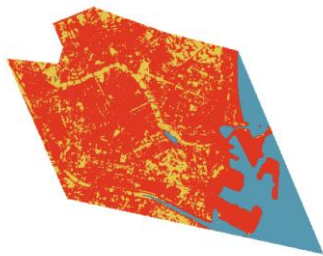
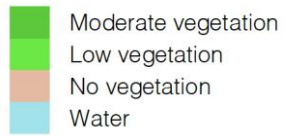
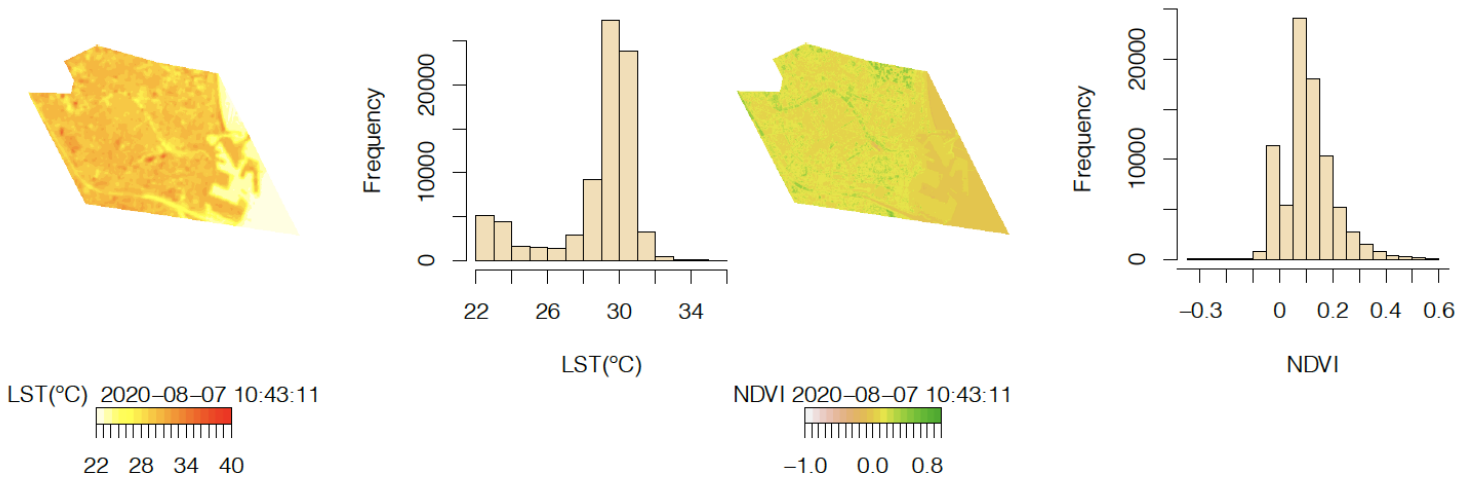


- Moderate vegetation
- Low vegetation
- No vegetation
- Water



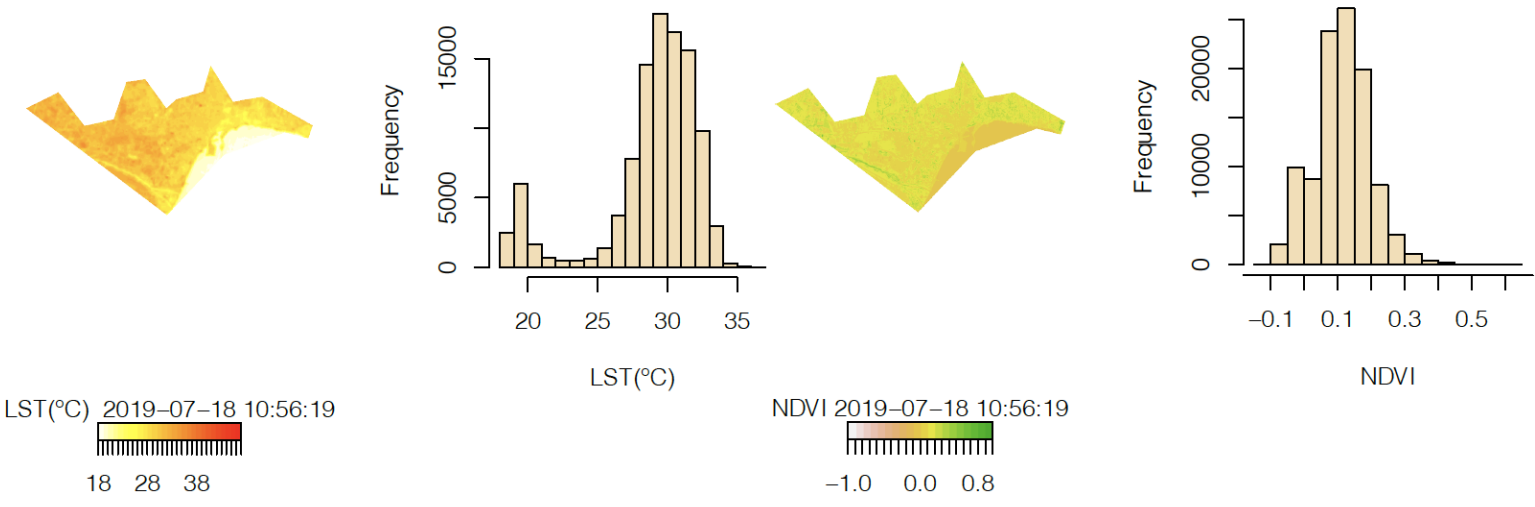
- Cluster 1: very favourable
- Cluster 2: favourable
- Cluster 3: unfavourable

# VALENCIA



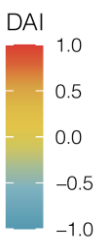
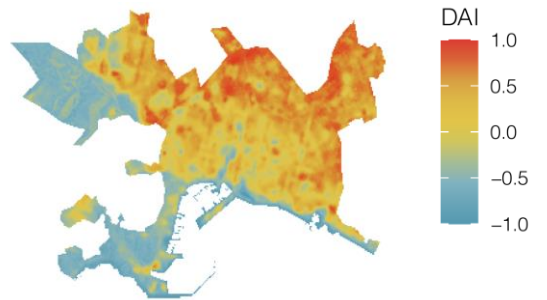
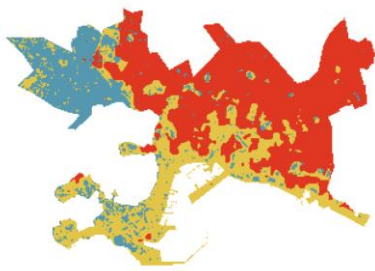
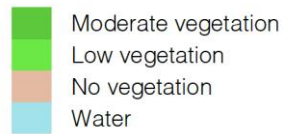
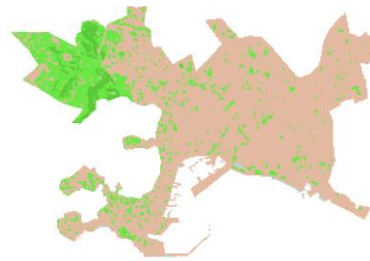
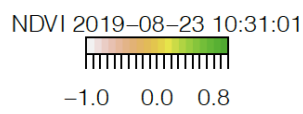
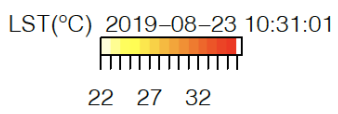
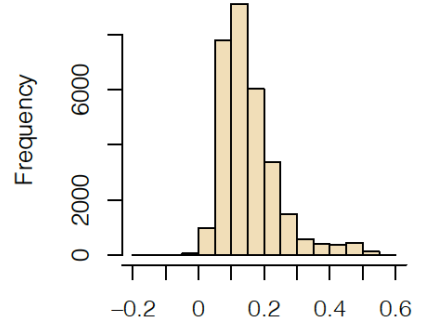
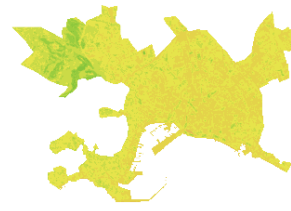
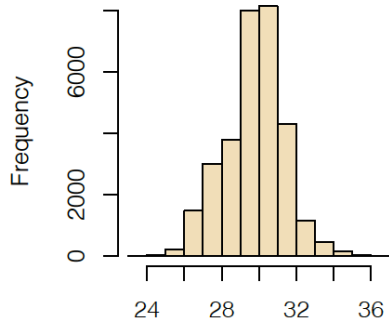
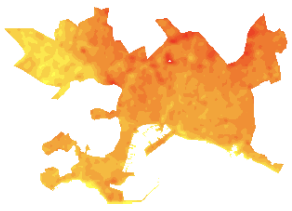
- Cluster 1: very favourable
- Cluster 2: favourable
- Cluster 3: unfavourable

# MALAGA



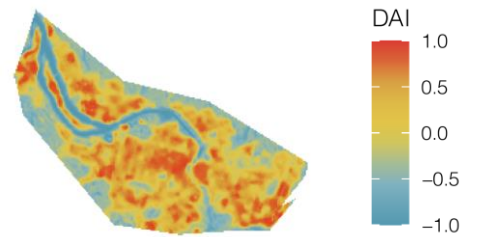
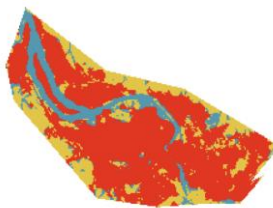
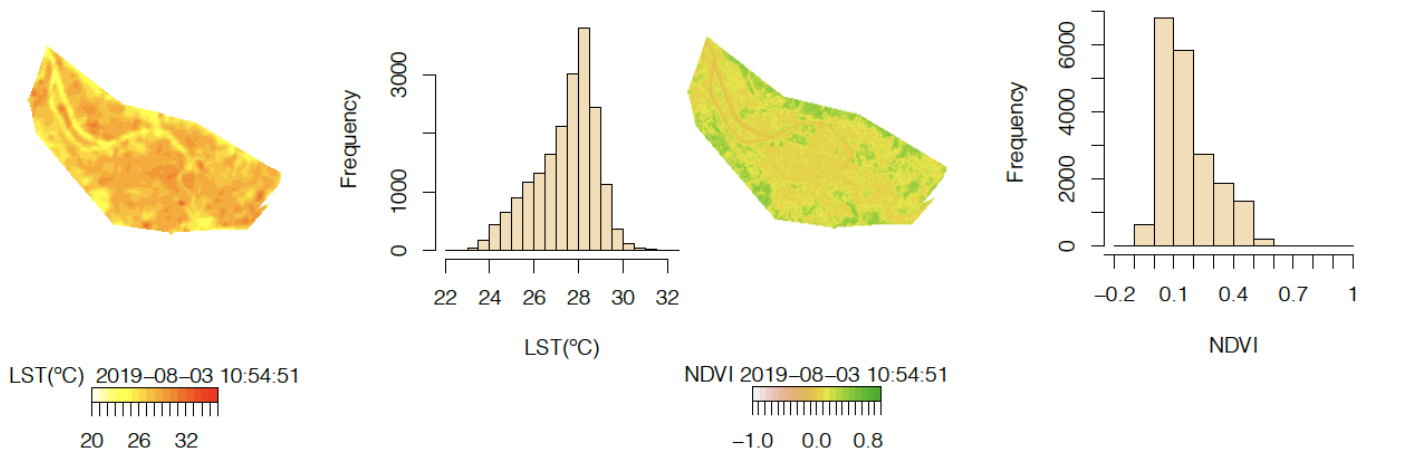


# PALMA DE MALLORCA



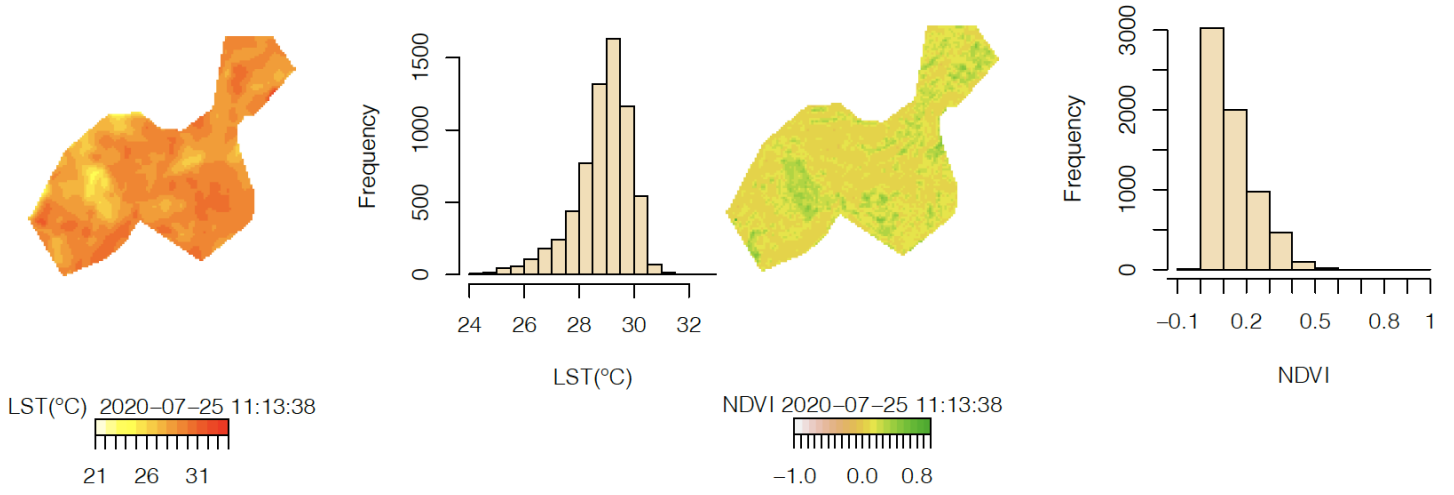
- Cluster 1: very favourable
- Cluster 2: favourable
- Cluster 3: unfavourable

# BILBAO



- Cluster 1: very favourable
- Cluster 2: favourable
- Cluster 3: unfavourable

# VIGO

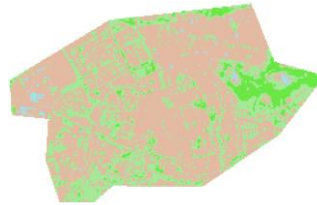
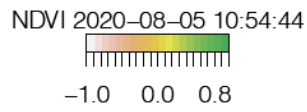
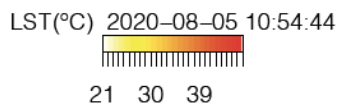
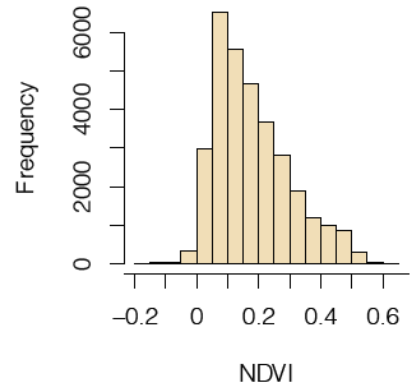
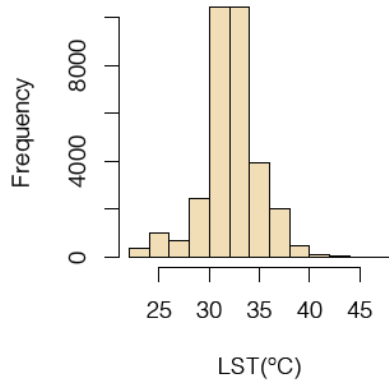
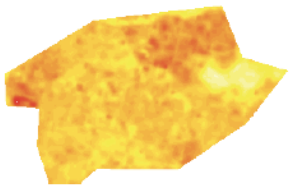


- Moderate vegetation
- Low vegetation
- No vegetation
- Water

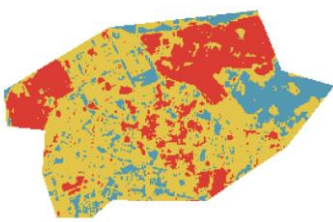


- Cluster 1: very favourable
- Cluster 2: favourable
- Cluster 3: unfavourable

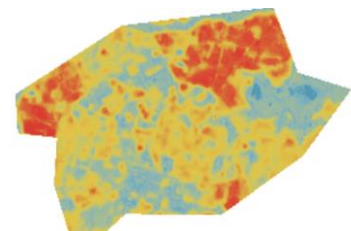
# VITORIA



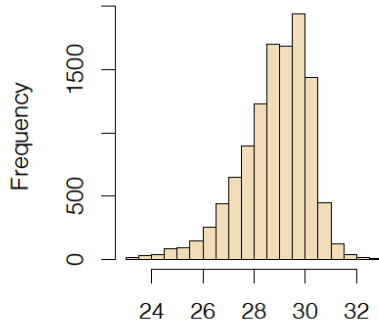
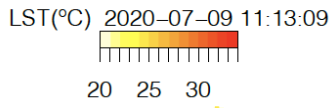
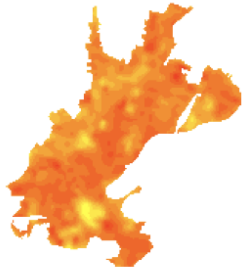
- Moderate vegetation
- Low vegetation
- No vegetation
- Water



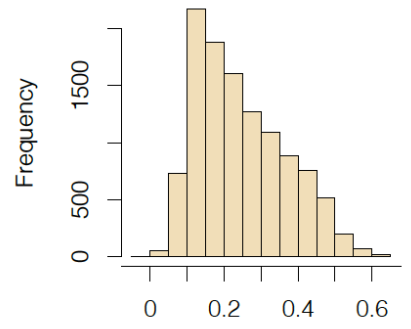
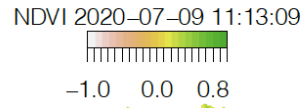
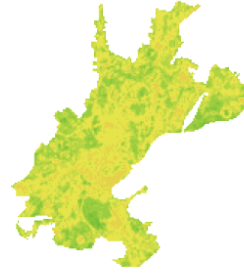
- Cluster 1: very favourable
- Cluster 2: favourable
- Cluster 3: unfavourable



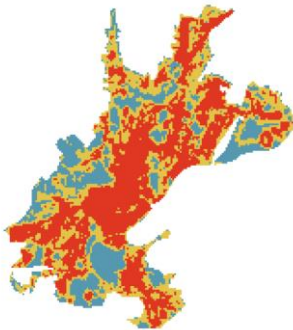
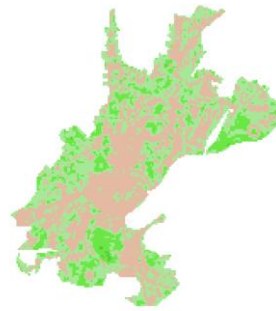
# SANTIAGO DE COMPOSTELA



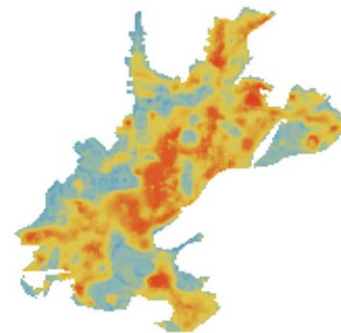
LST(°C)



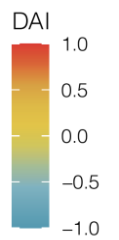
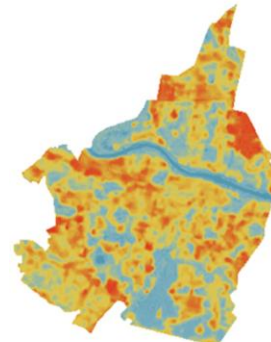
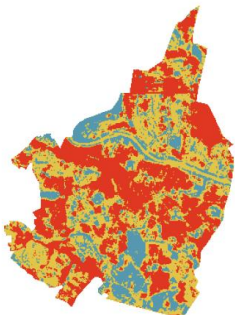
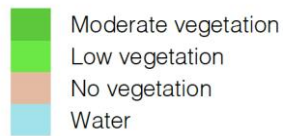
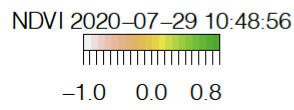
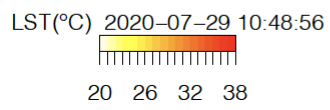
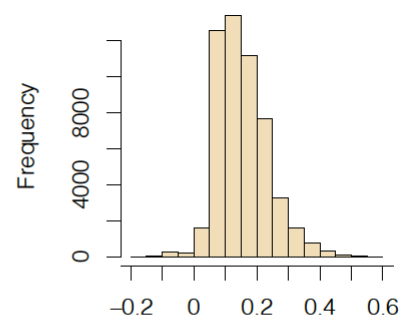
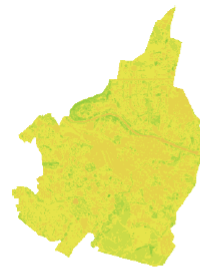
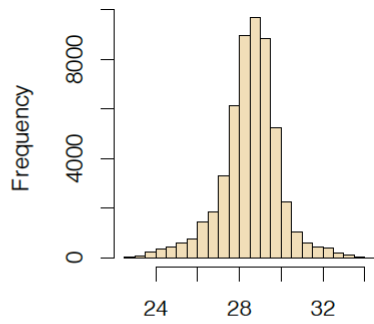
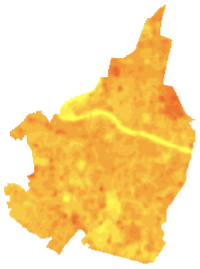
NDVI



- Cluster 1: very favourable
- Cluster 2: favourable
- Cluster 3: unfavourable

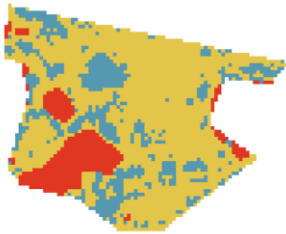
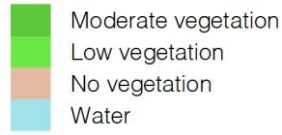
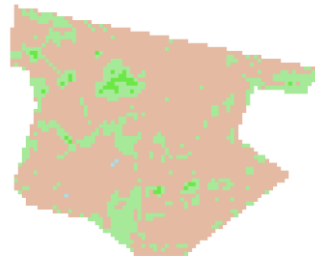
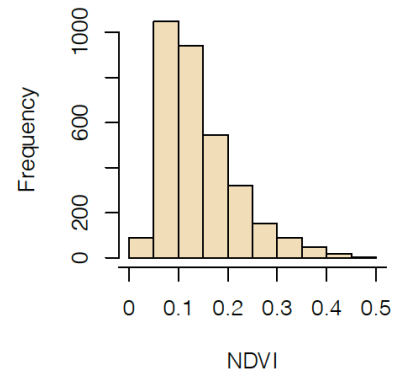
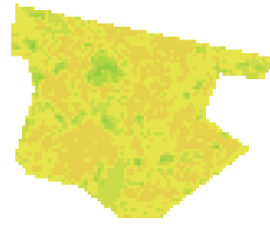
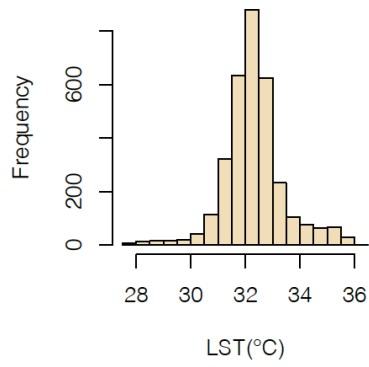
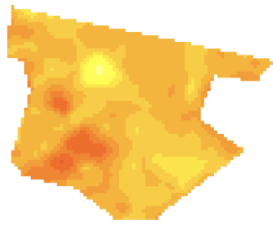


# ZARAGOZA

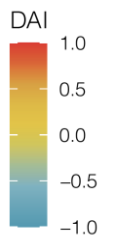
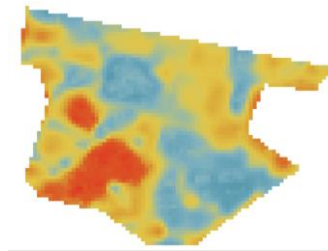


- Cluster 1: very favourable
- Cluster 2: favourable
- Cluster 3: unfavourable

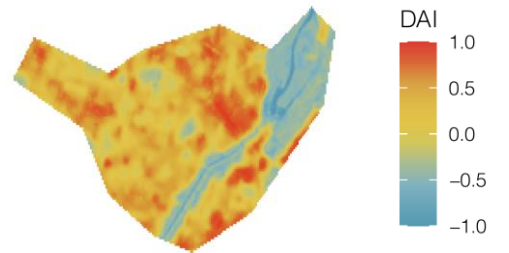
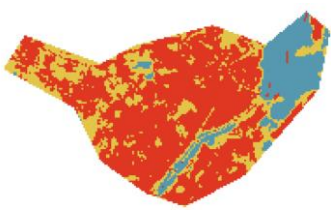
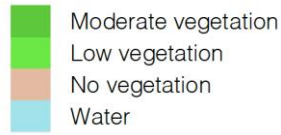
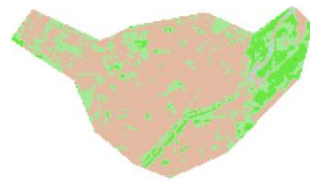
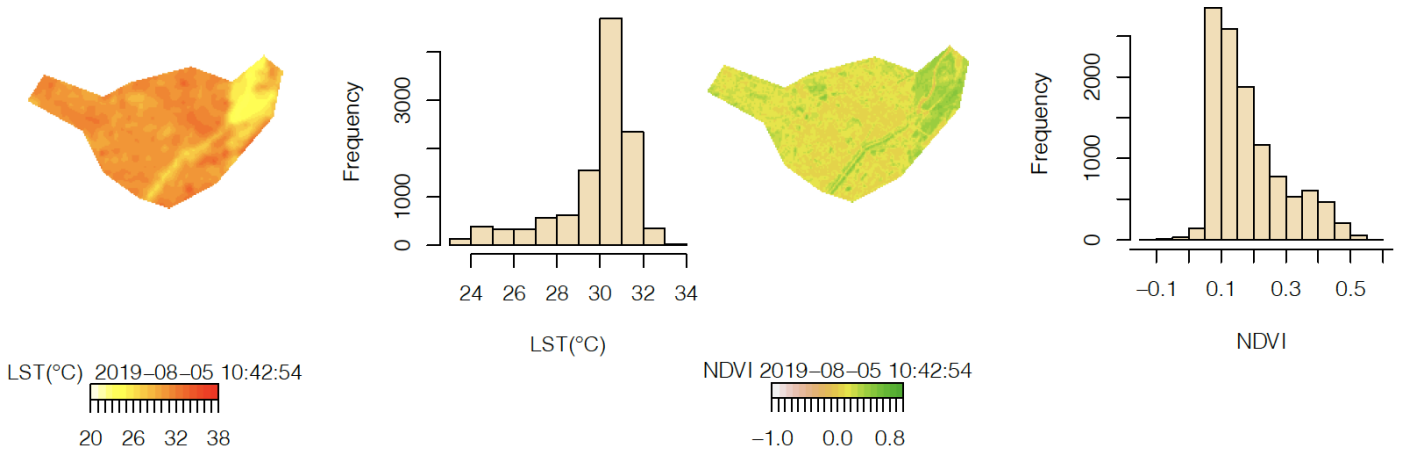
# HUESCA



- Cluster 1: very favourable
- Cluster 2: favourable
- Cluster 3: unfavourable



# LLEIDA



- Cluster 1: very favourable
- Cluster 2: favourable
- Cluster 3: unfavourable