

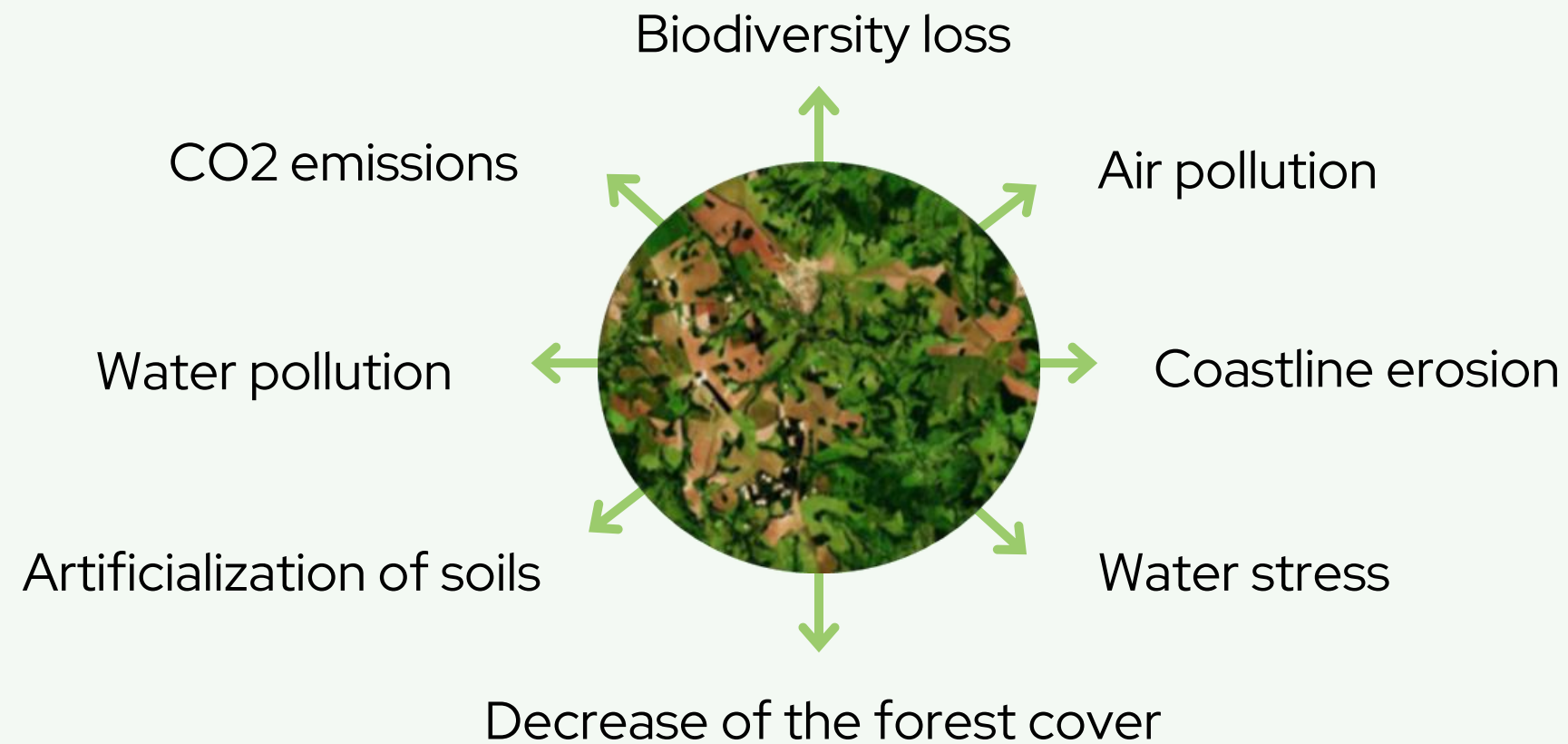


The Environment at the heart of decision making

PROBLEM IDENTIFICATION

EMERGENCY STATEMENT: THE NEED TO LIMIT THE HUMAN IMPACT ON THE ENVIRONMENT

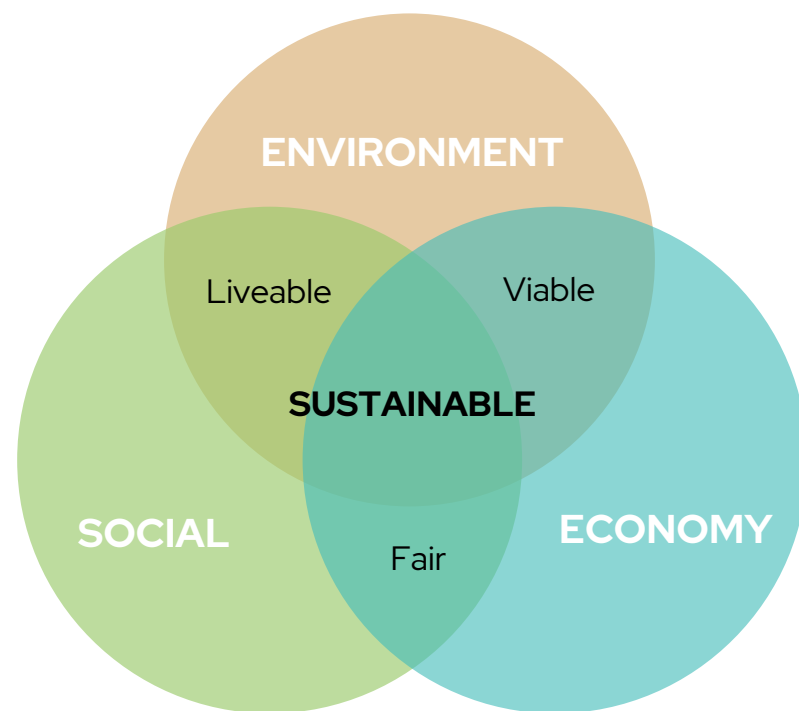
The industry is facing a large number of **environmental challenges**



We must make decisions to mitigate them

However, we do not necessarily have the **environmental indicators** to make this decision

ENVIRONMENTAL INDICATORS TO INVENT TOMORROW'S WORLD



Complete the 360° vision of sustainable development by integrating environmental indicators.

MURMURATION offers institutions a **digital decision support tool** to integrate **environmental issues**, and thus promote the **ecological transition on a territory**

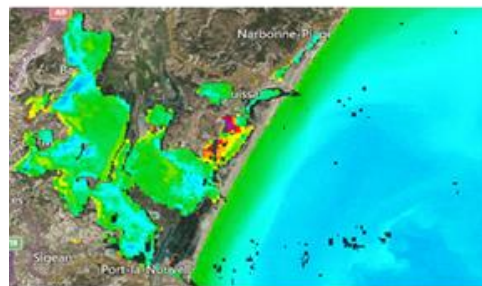


ENVIRONMENTAL INDICATORS TO INVENT TOMORROW'S WORLD

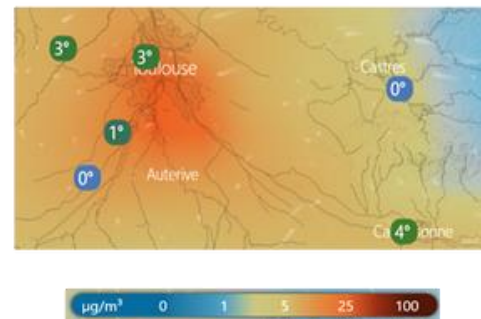
MURMURATION uses satellite data combined with field data to calculate indicators dedicated to monitoring the environment on a territory



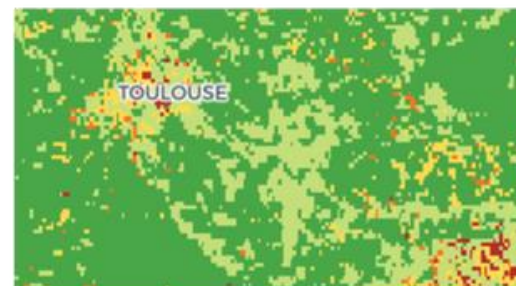
WATER



AIR



BIODIVERSITY



LAND



TOURISM STATISTICS



Study of a territory's environmental state



Study of the anthropogenic impact, such as tourism, on the environment

EXAMPLES



Air Quality benchmarking

EUROPEAN
TRAVEL
COMMISSION

- Air quality index calculated using Copernicus CAMS data aggregated to form the Murmuration Air Quality Index
- Madrid, Dublin, Berne, La Valette, Lisbonne, San Marin et Rome made the biggest progress
- 50% progress for Madrid & Lisbonne between 2019 & 2021
- Podgorica, Timisoara, Zagreb, Budapest, Warsaw, Athènes, Ljubljana and Nicosie have seen increasing pollution
- Varsovie & Sofia's pollution have increased by 50% between 2019 & 2021



EXAMPLES



Vegetation and green corridors

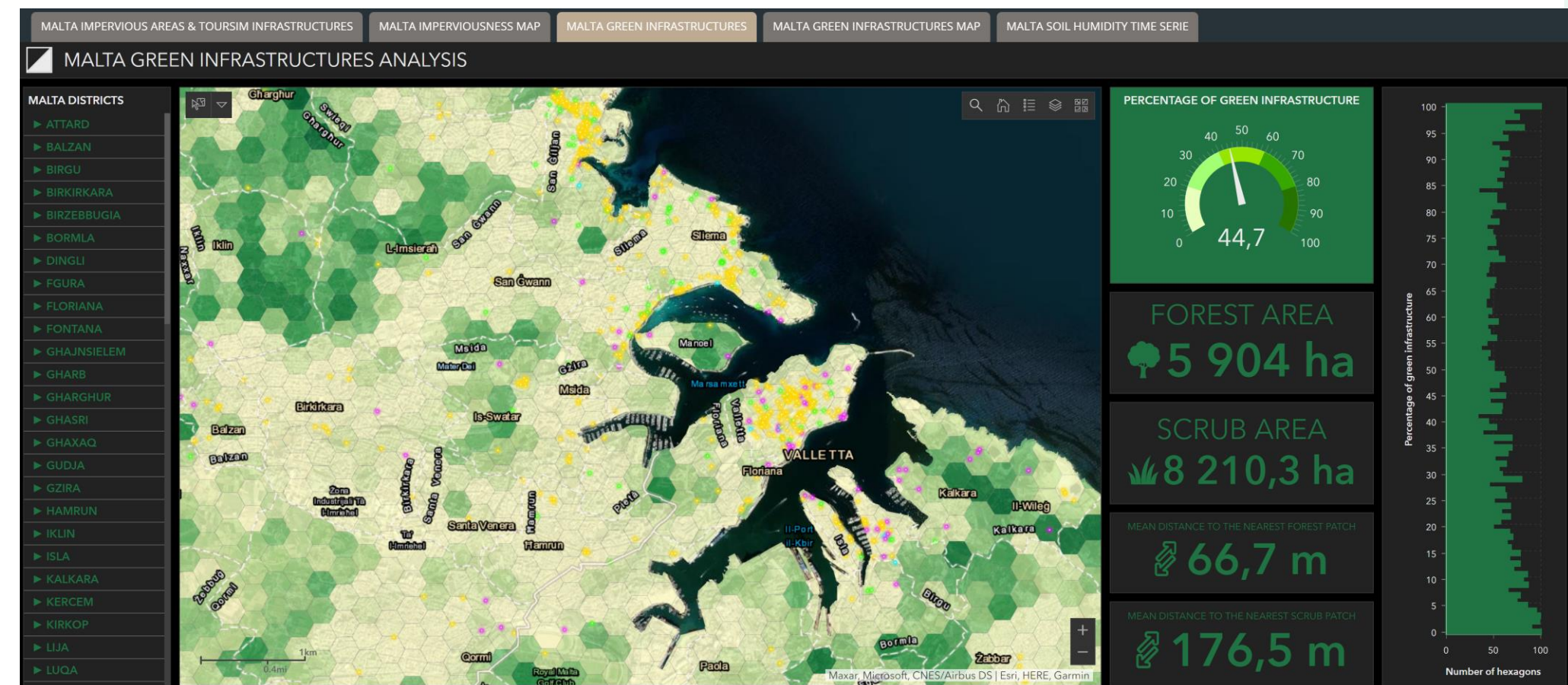


Objective :

Map and monitor green areas

Results :

Analysis of green cover evolution and dynamics over the past 10 years



EXAMPLES



Support to SDGs

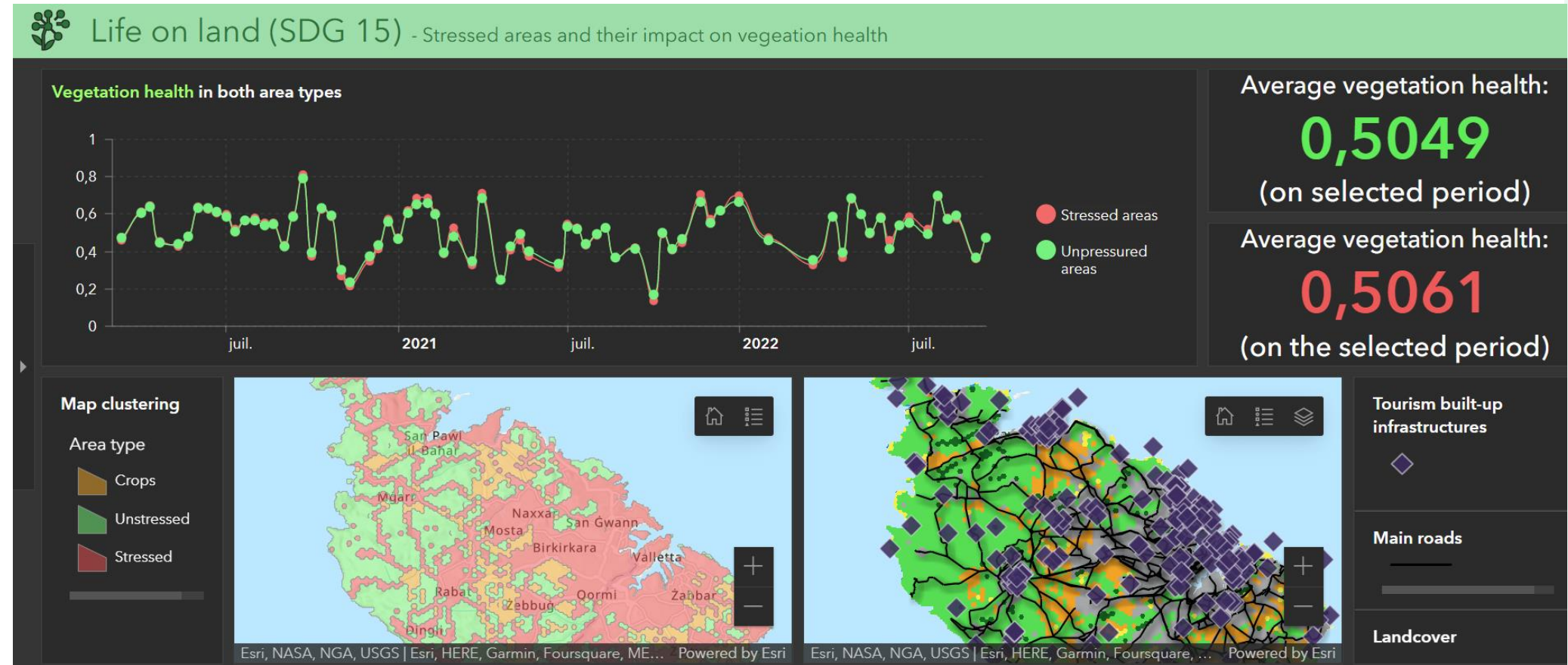


Objective :

Support the reporting and monitoring the progress towards the achievement of SDGs

Results :

Link between the sustainability on the island and the tourism infrastructure



EXAMPLES



Tourism & Air Quality



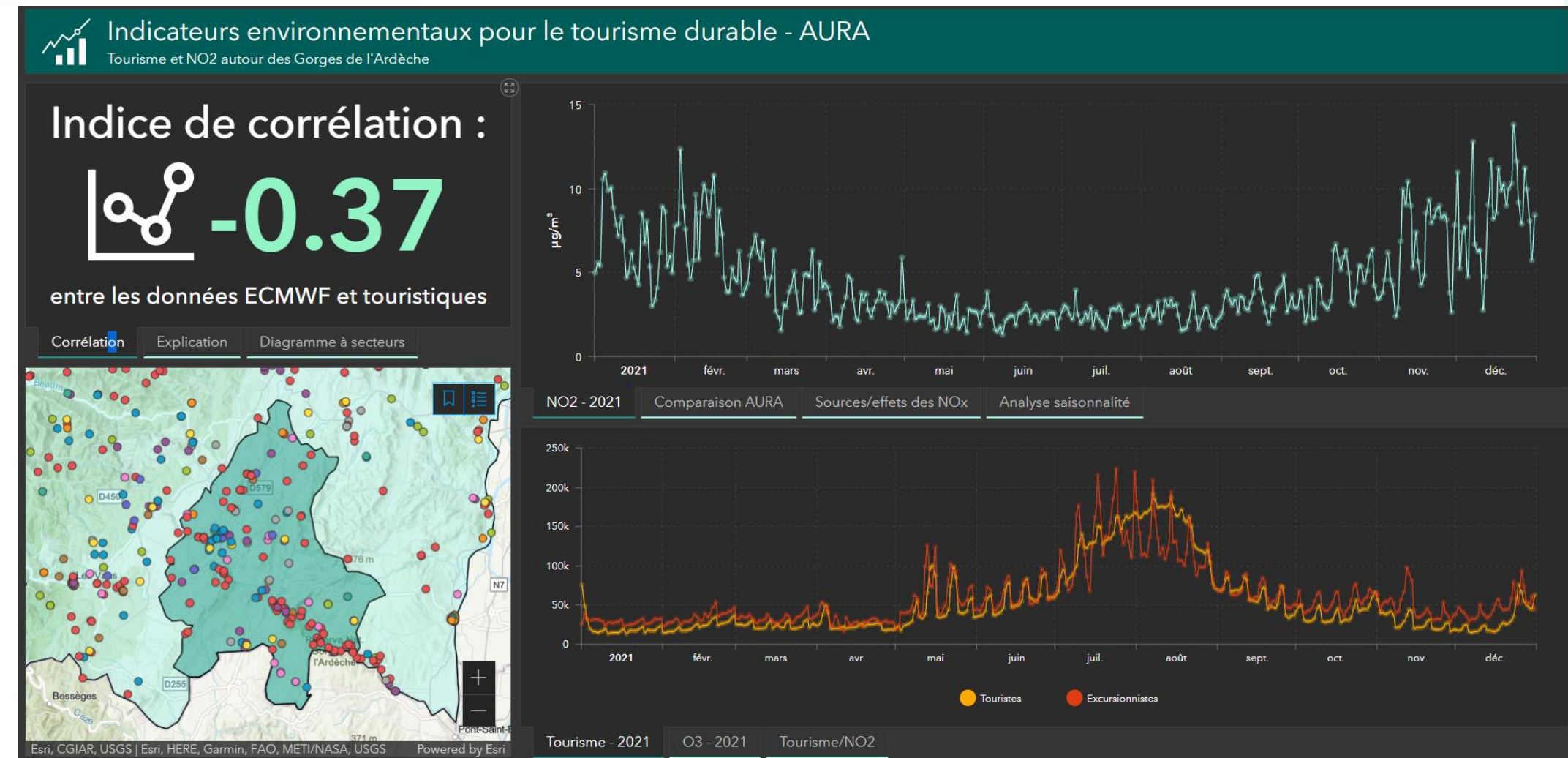
Auvergne
Rhône-Alpes
Tourisme

Objective :

Explore the link between air quality and number of tourists

Results :

Need to further explore further links related to meteorological data



EXAMPLES



Tourism & Meteo



Auvergne
Rhône-Alpes
Tourisme

Objective :

Explore the link between tourism activities
and meteorological conditions

Results :

Identification of popular destinations under
specific meteorological conditions



Les indicateurs environnementaux pour le tourisme durable

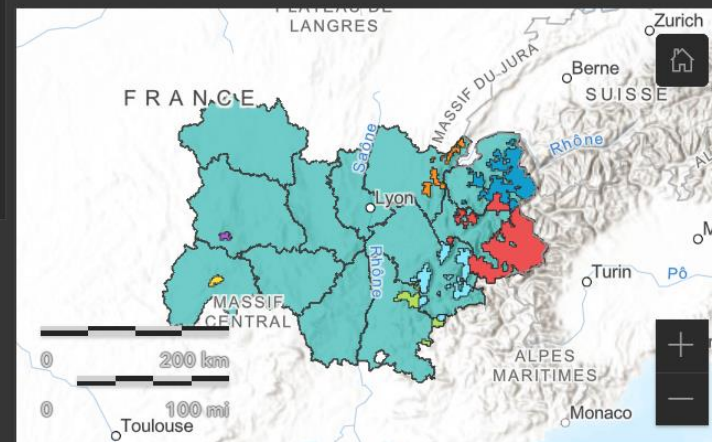
Conditions météorologiques dans les stations de montagne d'Auvergne-Rhône-Alpes

Indice de corrélation :



Un indice de 1 démontre une corrélation totale entre le nombre de touristes et l'indicateur. Un indice de 0 correspond à

Confort thermal



Esri, USGS | Esri, HERE, Garmin, FAO, NOAA, USGS

Powered by Esri



Confort thermal journalier

Température

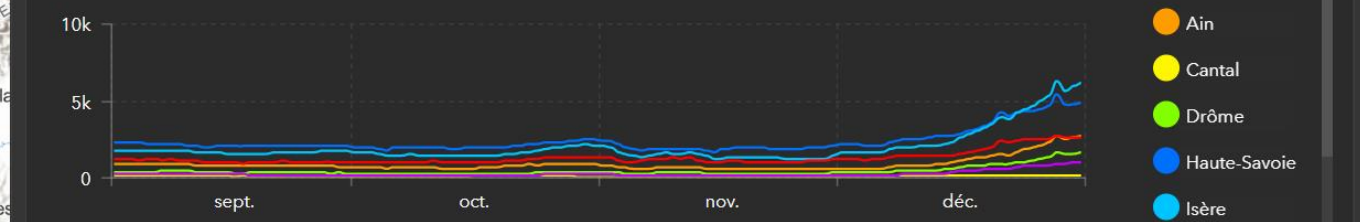
Précipitations

Vent

Nuages

Comparatif

Tendances touristiques des départements



Données issues du service Orange FluxVision.

Nombre de touristes par jour

Moyenne par semaine

Comparatif

EXAMPLES



Tourism & Snow Cover



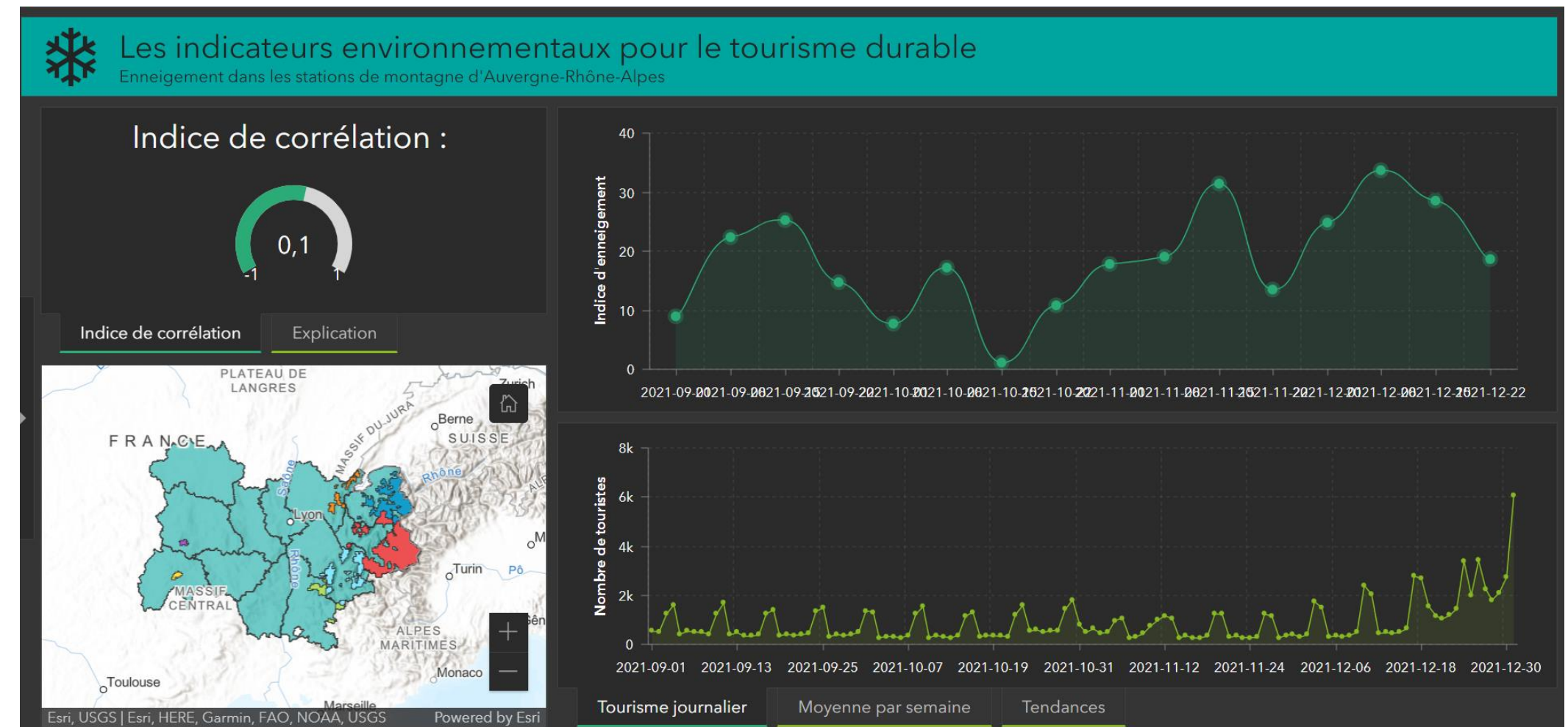
Auvergne
Rhône-Alpes
Tourisme

Objective :

Explore the link between tourism attractivity
of ski resorts and snow cover

Results :

Need to further explore the snow thickness and
adapatability to winter sports



EXEMPLES

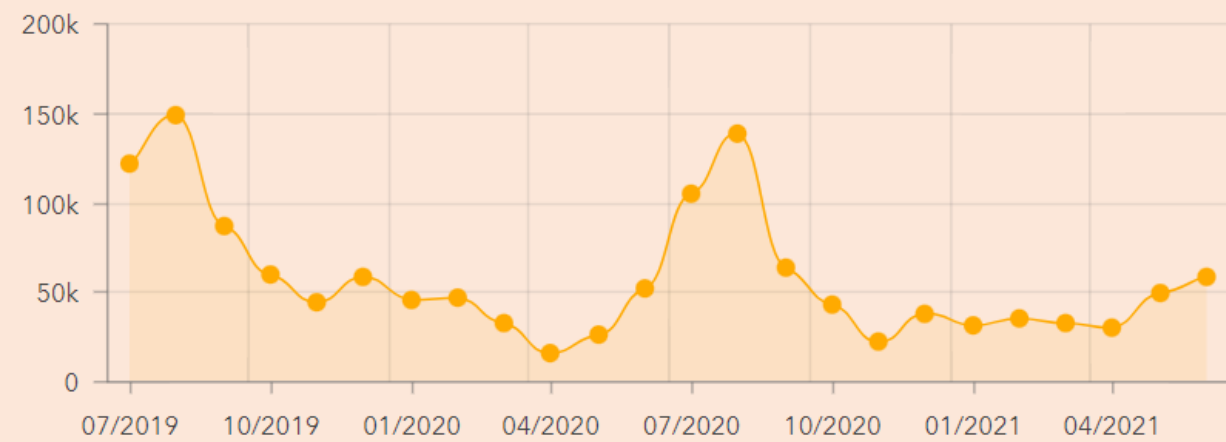
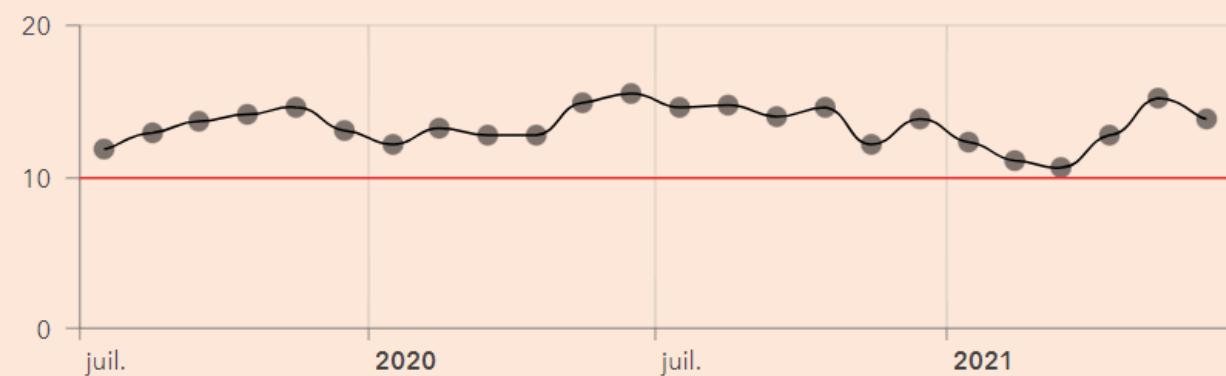


Cross analysis

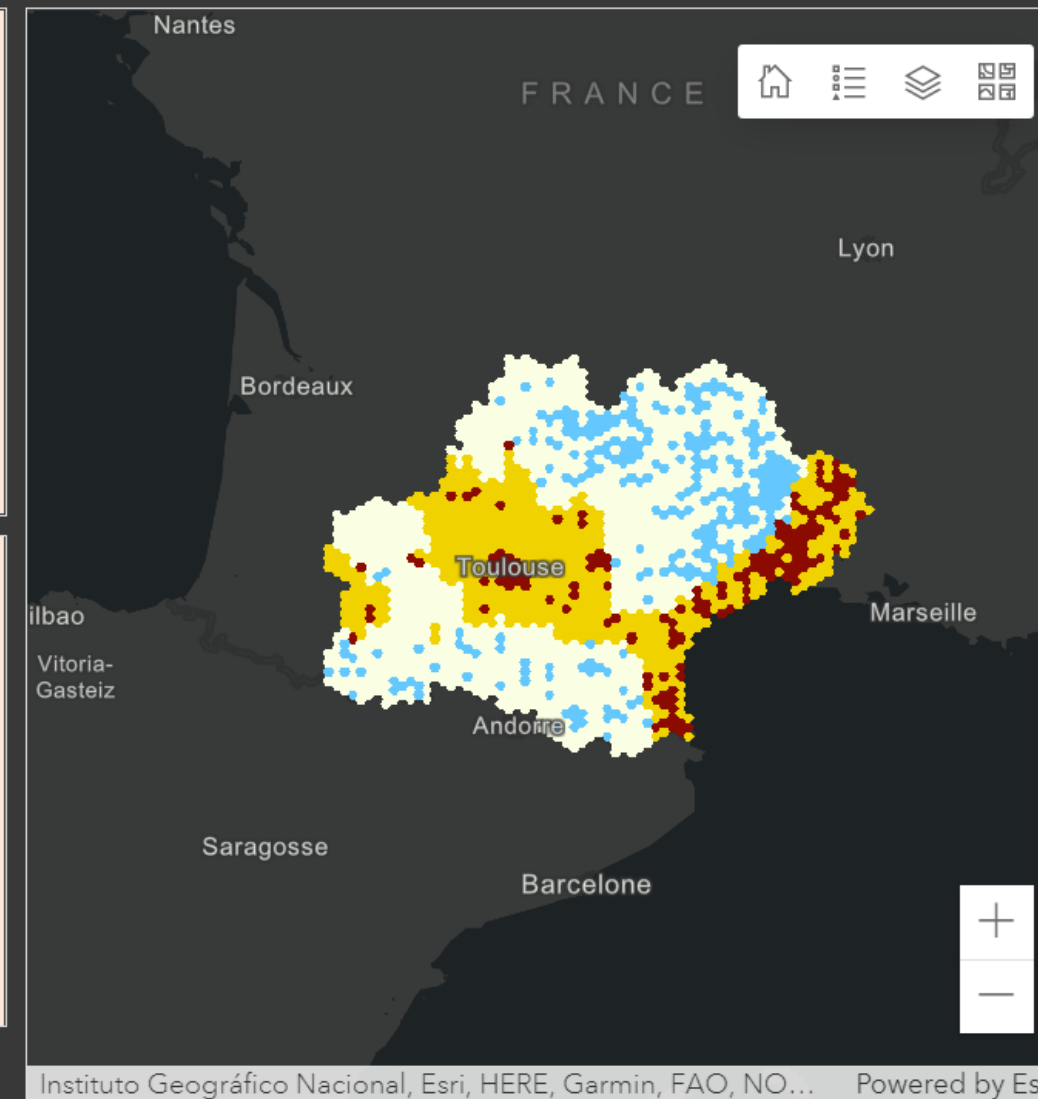


Occitanie - Pollution liée aux transports et tourisme

Indicateur agrégé de pollution de l'air lié au transport



Touristes sur sélection

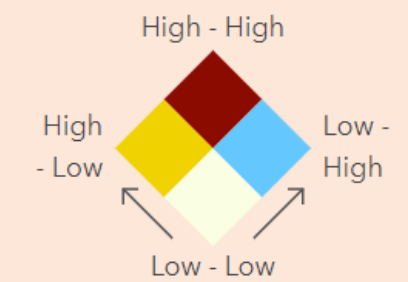


 **18,7k**
infrastructures touristiques.

Transport pollution/tourism infrastructures

Relation

- ↖ Transport related pollution
- ↗ Tourism infrastructures





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