
Η συμβολή του Προγράμματος Copernicus
στην ανάπτυξη εξειδικευμένων υπηρεσιών
για το περιβάλλον και τους πολίτες
opernicus
Framework Partnership Agreement
for Copernicus User Uptake

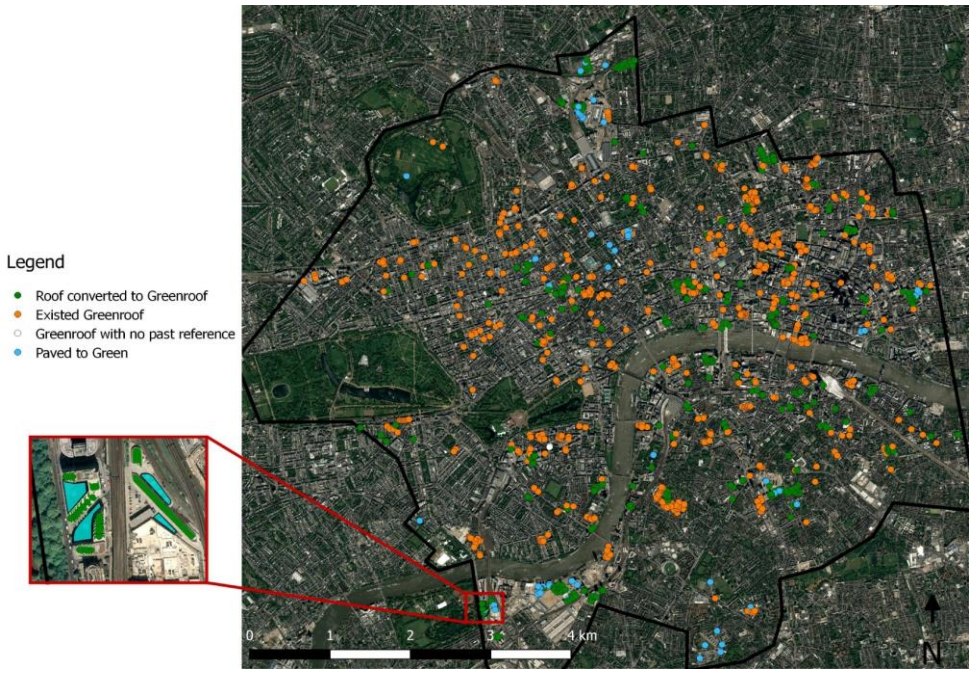
FORTH
FOUNDATION FOR RESEARCH AND TECHNOLOGY - HELLAS

RSLab http://rslab.gr

- Δραστηριοποίηση στον τομέα της **Παρατήρησης Γης**, με έμφαση στο **αστικό περιβάλλον**, στο **αστικό κλίμα** και στον **αστικό σχεδιασμό**, με ευρεία ανάπτυξη εφαρμογών σε περιβάλλον **υπολογιστικού νέφους**.
- Συντονισμός του **ERC** (European Research Council) έργου ***urbisphere*** με αντικείμενο την αλληλεπίδραση & ανατροφοδότηση πόλεων και κλιματικής αλλαγής.
- Λειτουργία **εξοπλισμού *in-situ* μετρήσεων** (cal/val infrastructure, flux towers, wireless sensors network, spectroradiometers), καθώς και **μη επανδρωμένων εναέριων οχημάτων** με πολυφασματικές, **υπερφασματικές** και θερμικές κάμερες.
- Ανάπτυξη **συνεργασιών** στον τομέα της Παρατήρησης Γης και του κλίματος και μακροχρόνια αλληλεπίδραση με **Τοπικές Αρχές** σε **διεθνές επίπεδο**.
- Συμμετοχή στο **GEO Climate Change Working Group**, στο **GEO** Programme Board **Urban Resilience Subgroup** και στην Ομάδα Εργασίας του **Περιφερειακού Σχεδίου Προσαρμογής στην Κλιματική Αλλαγή Κρήτης**.
- Συντονισμός και συμμετοχή σε έργα **H2020, FP7, ESA** και **ERA.Net**.

urbisphere coupling dynamic cities and climate
CoCO2 Prototype system for a Copernicus CO_2 service
URE
EO4UTEMP
URBANFLUXES
BRIDGE
SEN4RUS
flire
EO4SEB
GEOURBAN
thinknature

Copernicus Sentinels for Nature Based Solutions



Urban NBS application

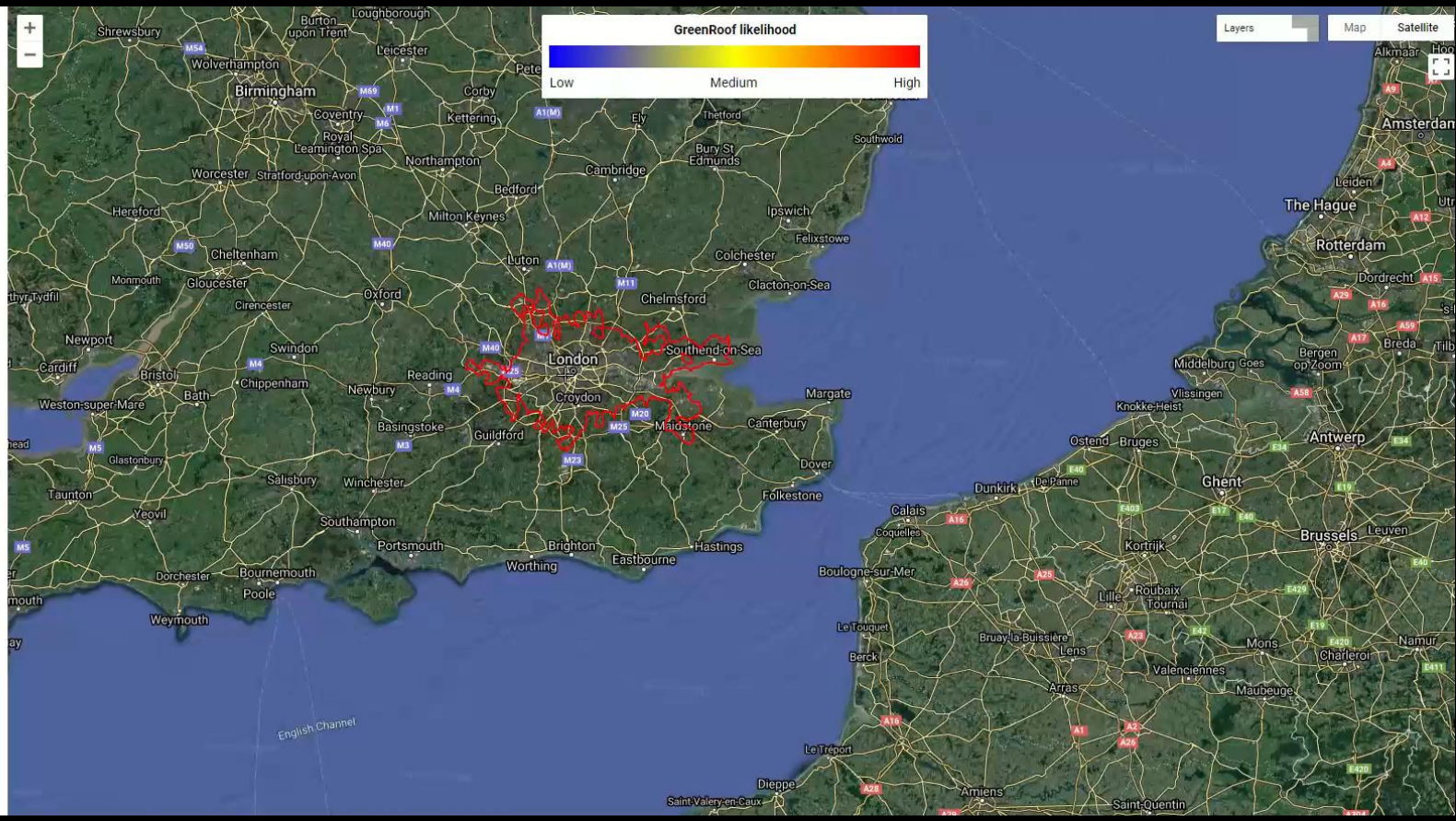
Select between GreenRoof Detection and monitoring. Then select a polygon on the map to start.

GreenRoof Detection

Longitude:

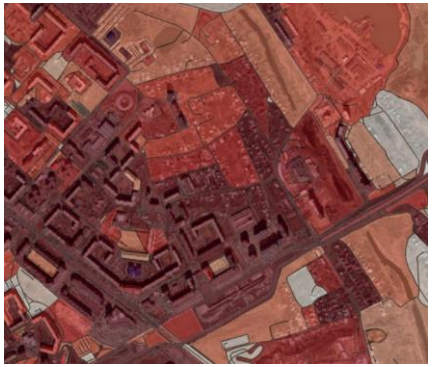
Latitude:

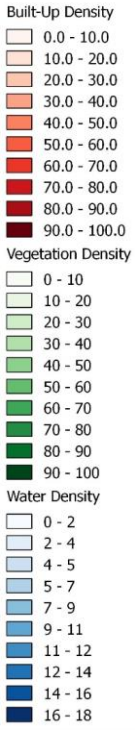
This application has been developed within the EOVALUE project, which has received funding from the European Union's Horizon 2020 research and innovation programme.

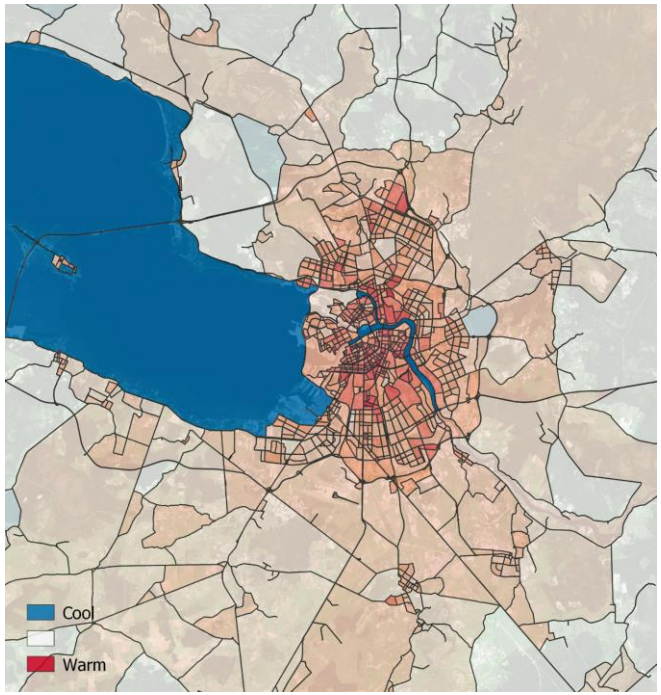


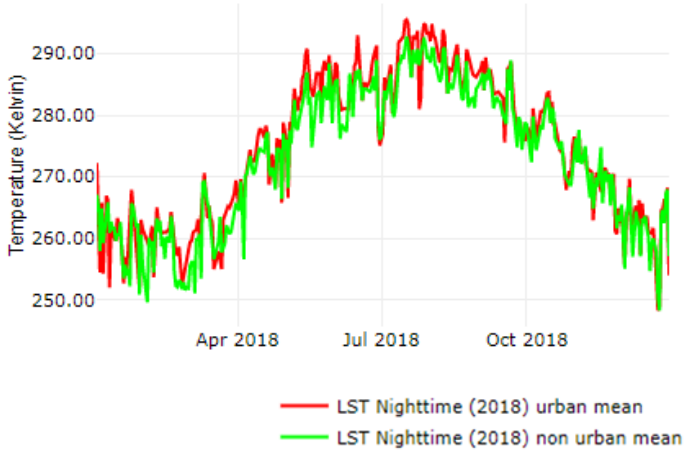
SEN4RUS

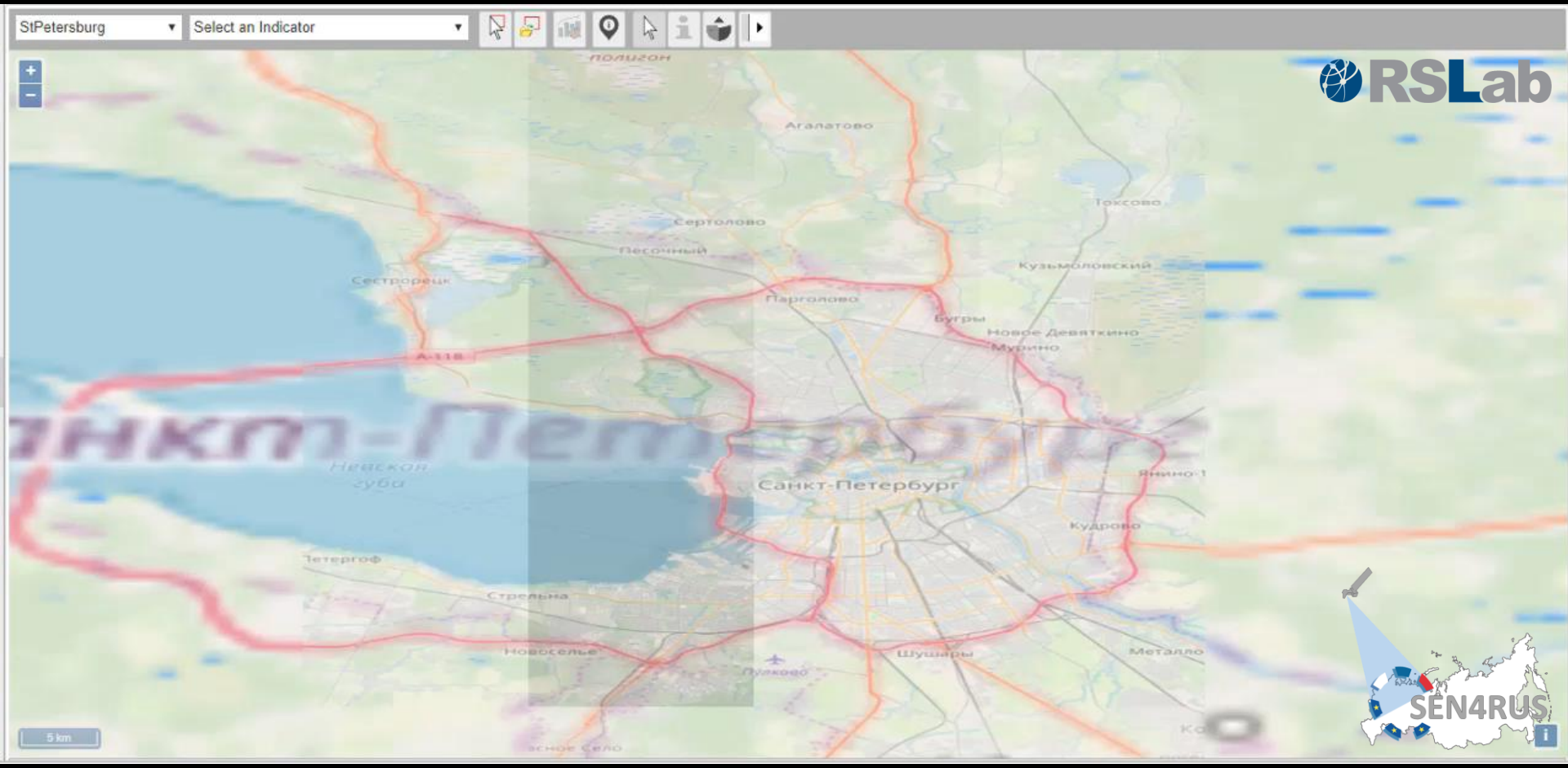
Exploiting Sentinels for supporting urban planning applications at city and regional levels in Russia



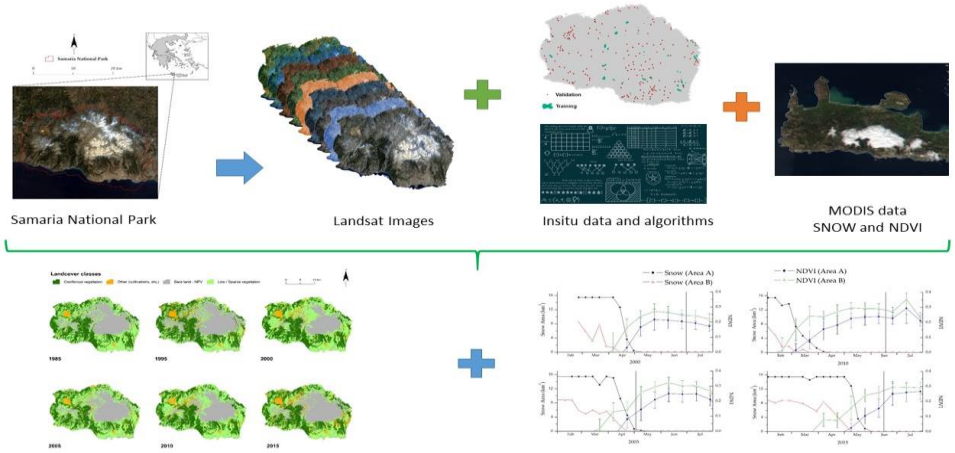


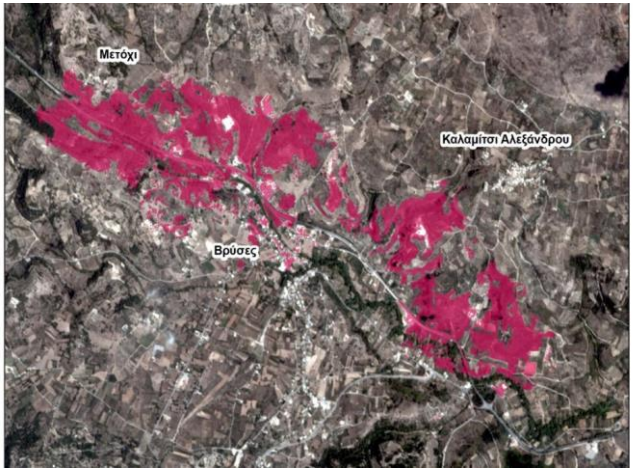


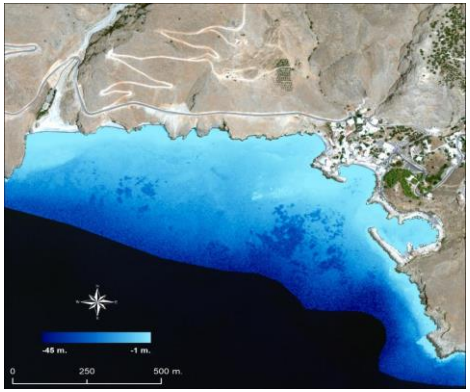


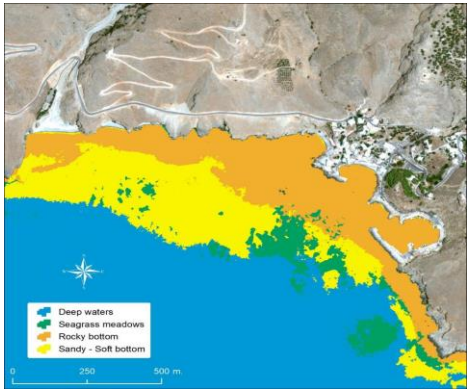

StPetersburg
Select an Indicator
RSLab
Агалатово
Сертолово
Песочный
Сестрорецк
Парголово
Бугры
Новое Девяткино
Мурино
Токсово
Кузьмоловский
Янино-1
Кудрово
Санкт-Петербург
Невская губа
Петергоф
Стрельна
Новосельe
Шушары
Металло
5 km
SEN4RUS

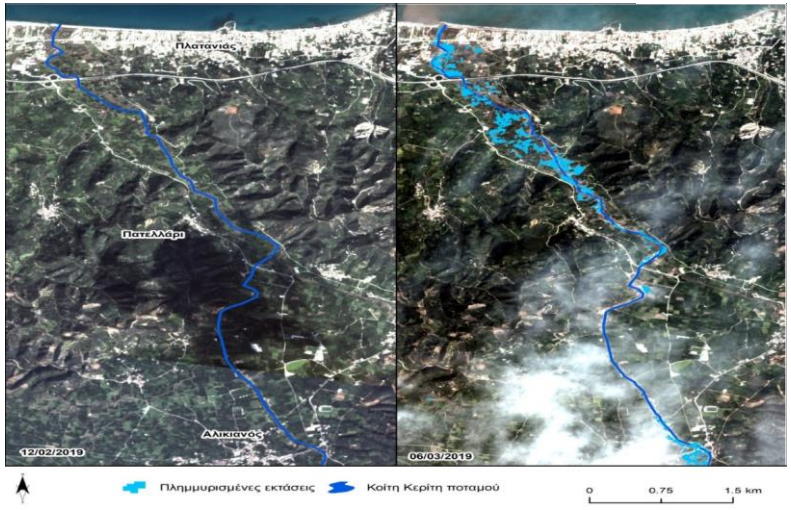
Ecosystem Services
Natural Disasters Monitoring
Bathymetry







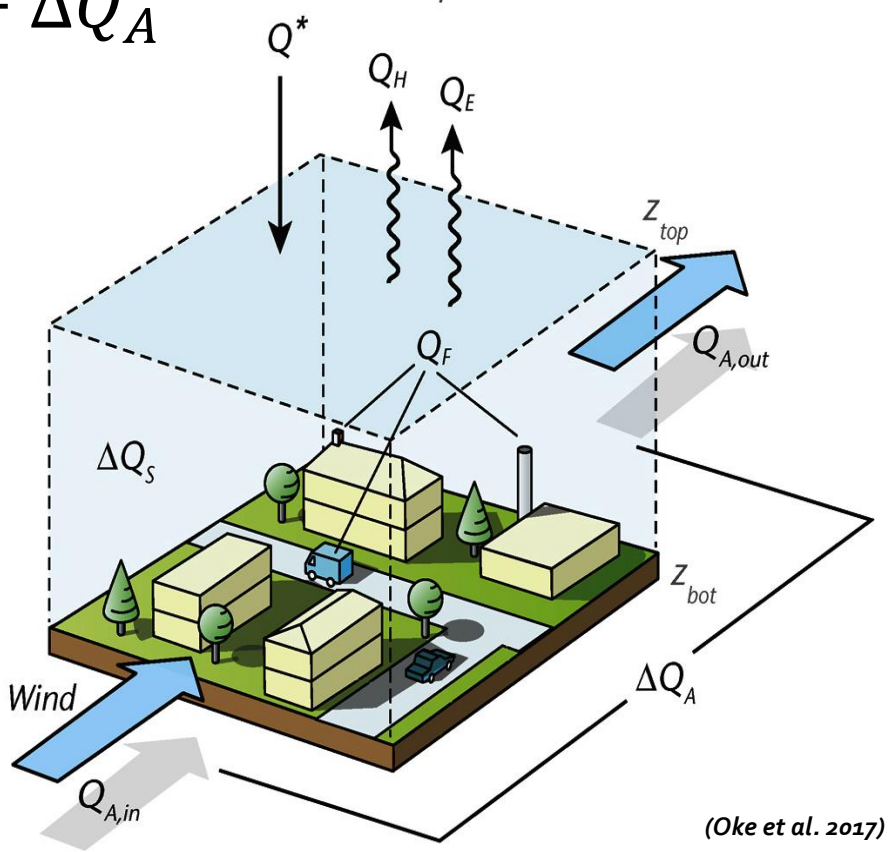




Urban Energy Fluxes from Space

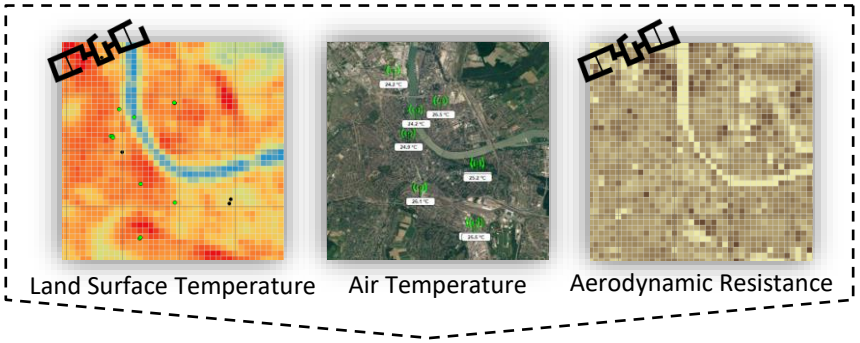
$$Q^* + Q_F = Q_H + Q_E + \Delta Q_S + \Delta Q_A$$

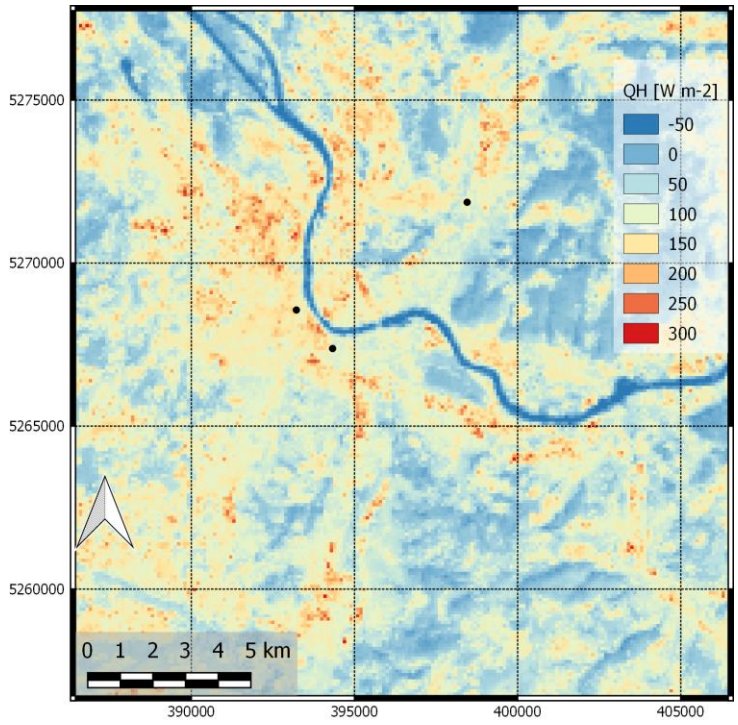
- Q^*: Net all-wave radiation balance
- Q_F : Anthropogenic heat flux
- Q_H : Turbulent sensible heat flux
- Q_E : Turbulent latent heat flux
- ΔQ_S : Net change in heat storage
- $\Delta Q_A = Q_{in} - Q_{out}$: Advective heat flux

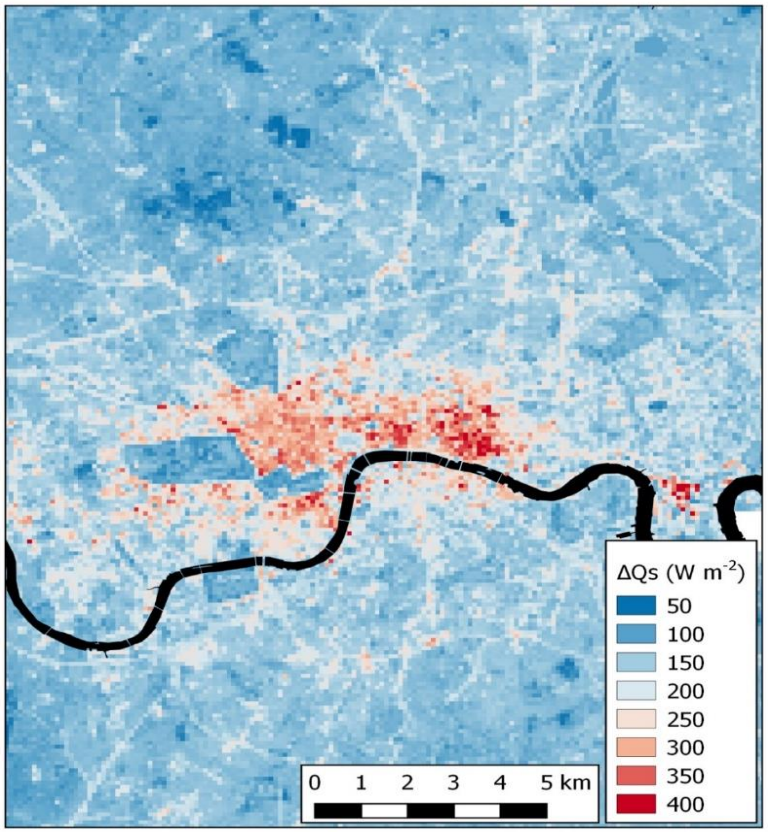


Urban Energy Fluxes from Space

URBANFLUXES





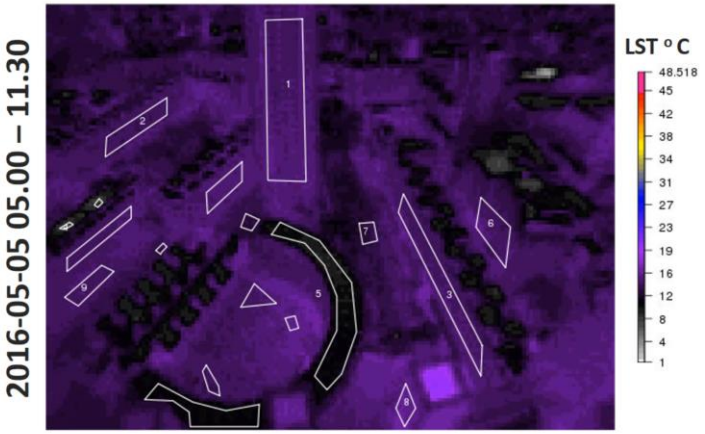


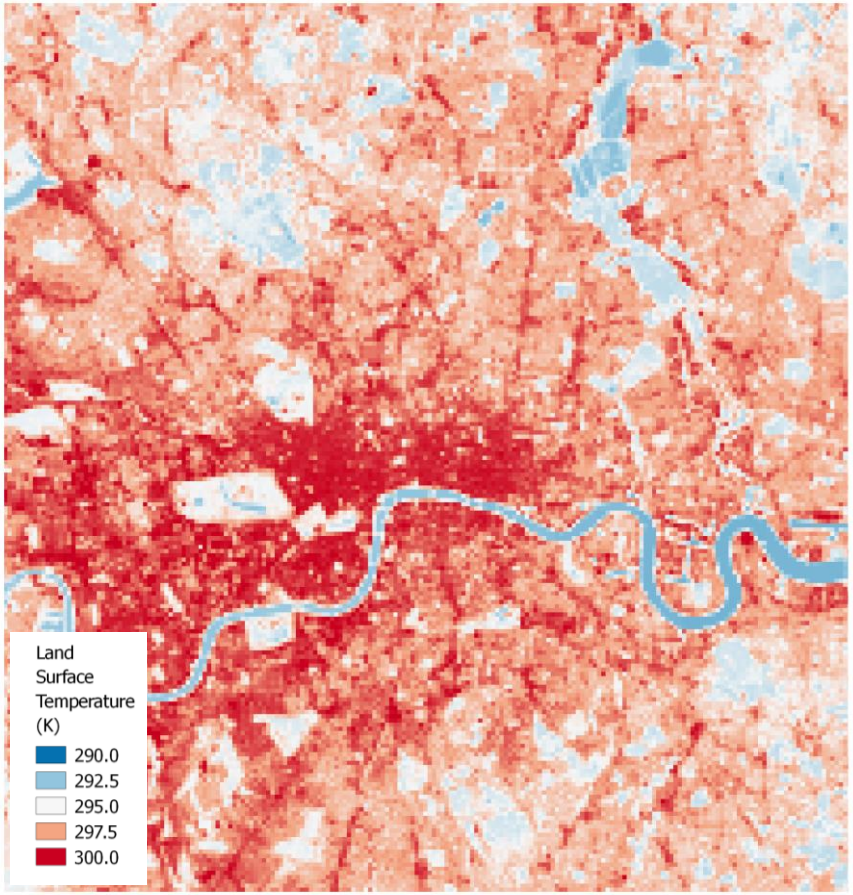
(Chrysoulakis et al. 2019)

Large scale exploitation of satellite data for the assessment of urban surface temperatures

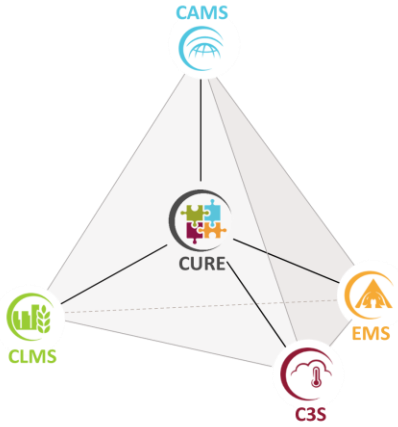
EO4UTEMP

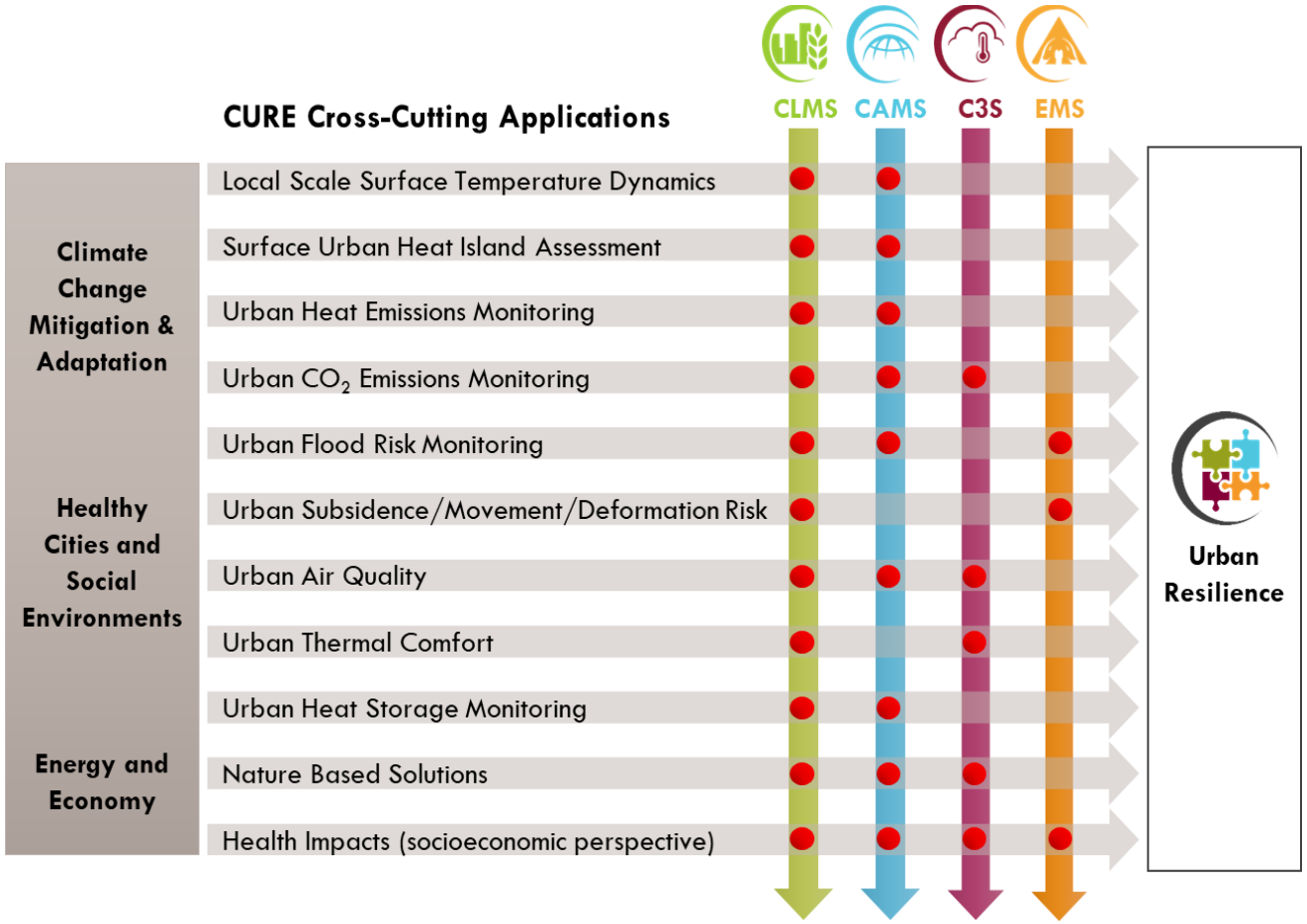
London Barbican





Copernicus for Urban Resilience in Europe

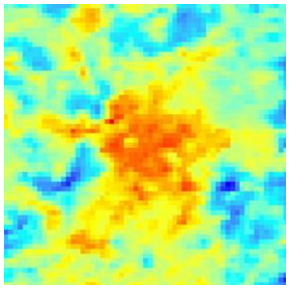




The CURE cross-cutting Applications

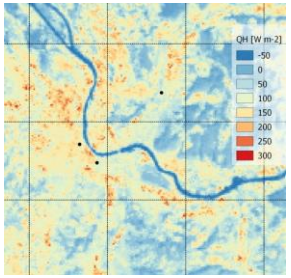
LOCAL SCALE SURFACE TEMPERATURE DYNAMICS

Developers: FORTH, DLR, TECNALIA



SURFACE URBAN HEAT ISLAND ASSESSMENT

Developers: DLR, FORTH, UWE



URBAN HEAT EMISSIONS MONITORING

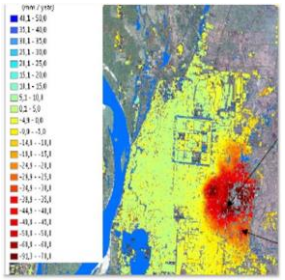
Developers: UNIBAS, FORTH

URBAN CO2 EMISSIONS MONITORING

Developers: UNIBAS, FORTH

URBAN FLOOD RISK

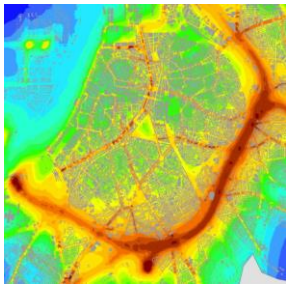
Developers: GISAT, GEOVILLE, DLR



URBAN SUBSIDENCE, MOVEMENTS AND DEFORMATION RISK

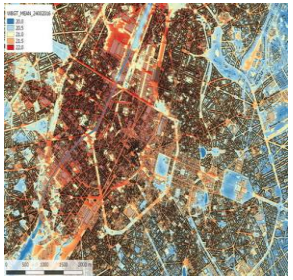
Developers: GISAT, VITO

The CURE cross-cutting Applications



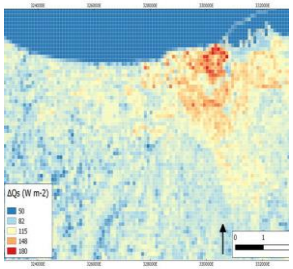
URBAN AIR QUALITY

Developer: VITO



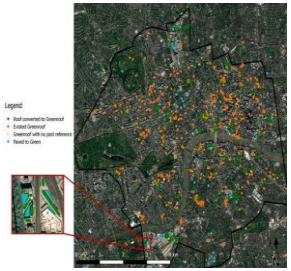
URBAN THERMAL COMFORT

Developer: VITO



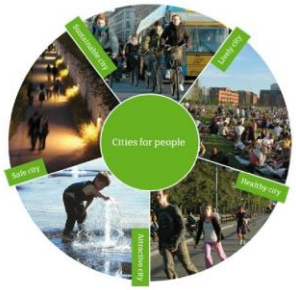
URBAN HEAT STORAGE MONITORING

Developers: FORTH, UNIBAS



NATURE-BASED SOLUTIONS

Developers: TECNALIA, DLR, FORTH



HEALTH IMPACTS (SOCIOECONOMIC PERSPECTIVE)

Developer: ApHER

ANTHROPOGENIC CO_2 EMISSION MONITORING CAPACITY

CoCO2

Prototype system for a Copernicus CO_2 service

urbisphere

coupling dynamic cities and climate

erc

Larger-scale climate

↓

Exposure and vulnerability of urban population / infrastructure

Human responses

Local- and microclimate

↕

Dynamic socio-economic urban development

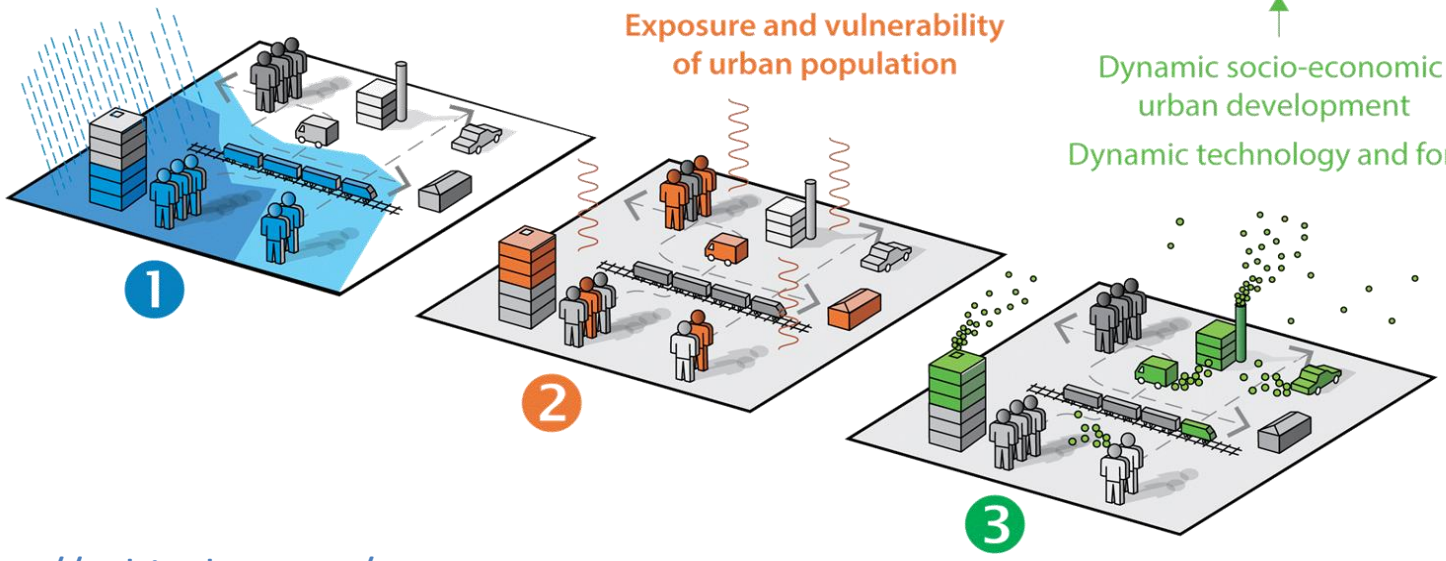
Exposure and vulnerability of urban population

Larger-scale climate

↑

Dynamic socio-economic urban development

Dynamic technology and form



http://urbisphere.eu/

Σας ευχαριστώ!

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Τηλ. 2810 391771

Framework Partnership Agreement for Copernicus User Uptake