

April 2022



## EO FOR SUSTAINABLE URBAN PLANNING

### >>> A few years later

Within the framework of a user-oriented approach, innovative methodologies exploiting multi-sensor data has enabled the publication of reference Land Use (LU) and Land Cover (LC) datasets for the year 2018. This operational project has gathered a lot of visibility and it has increased the awareness about Copernicus solutions and innovation in decision making about territorial management.

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BENEFICIARIES	Institut Scientifique de Service Public; Service Public de Wallonie	Service Public de Wallonie	Service Public de Wallonie; Urban developers; Architects and construction professionals	Citizens and society
TIER	<b>TIER 1: SERVICE PROVIDER</b>	<b>TIER 2 PRIMARY USER</b>	<b>TIER 3 SECONDARY USER</b>	<b>TIER 4 END USER BENEFICIARIES</b>
SERVICES	Sentinel-1; Sentinel-2; Copernicus Land Monitoring Service (CLMS)	Two distinct Land Cover (LC) and Land Use (LU) datasets; An urban climate model (risk analysis model)	An activity-based cellular automata model (LCLU changes simulation); Population distribution until 2060; Urban heat island (UHI) maps; Frequency of heat waves	Improved territorial planning; Environmental (resources) protection

Value chain definition following SeBS Methodology - <https://earsc.org/sebs>

### The space-based solution

This Copernicus-based solution was produced by a consortium of scientific entities and by the Public Administration for internal use of PA itself, and for other users such as companies, professionals, agencies, associations, single citizens.

### The Usage Maturity Level

The solution has transitioned to a higher level of UML. The main reasons for this achievement were the increased recognition about the effectiveness of the solution at decision-making level and additional funds were allocated within the organisation itself.

Thematic Area



TERRITORIAL MANAGEMENT AND URBAN PLANNING

Region of Application



WALLONIA

Sentinel mission used



S1, S2

Copernicus Service used



CLMS

Usage Maturity Level



4/5

## Overall benefits

### ECONOMIC



- Efficiency gains have been registered
- Reduction of risk has been registered
- The replicability of the solution was achieved (applied to entire Region)

### ENVIRONMENTAL



- Reduced depletion of natural resources
- Improved territorial planning strategies and environmental protection

### REGULATORY



- The solution has helped to inform the design of policy parameters
- There were improvements in the policy monitoring capabilities of the PA
- The solution has facilitated the compilation of institutional reports by the PA
- The solution has improved the PA's capabilities to detect and assess non-compliances

### INNOVATION



- The solution has helped to introduce some innovation in the functioning of the PA
- There were positive market externalities

### SCIENCE



- The solution has helped to improve understanding about a specific topic of interest traditionally not related to Earth Observation (EO)
- The solution has enabled some technological advancement
- There was an increase in technical/scientific expertise related to Copernicus/EO within the PA
- There was an increase in technical/scientific expertise related to Copernicus/EO at the service provider

### SOCIETAL



- Improved coordination and governance has been registered
- Sense of trust/community for the involved actors has increased
- Strategic added value was registered for the involved actors

Benefits classification following SeBS Methodology - <https://ears.org/sebs>

## Interesting facts...

The work was initially funded by an ISSeP internal fund, with support from Belspo (federal fund). Following the interest generated by the prototypes, further operationalised, the public administration (SPW) has funded a regional application of the LU and LC mapping, through a follow-up project named "Walous". After reference datasets were produced for 2018 by a consortium of ISSeP and two universities (ULB, UCLouvain), the SPW is now funding the update of the LC dataset by a private company (Aerospacelab). This novel solution uses Artificial Intelligence algorithms.

## Outlook to the future

For the future, PA confirms their high interest towards Copernicus, especially when integrated with other regional dataset. Furthermore, PA wishes to be more independent in performing the products' update. PA evaluates that communication and knowledge transfer among Regional Authorities should be improved and that higher budget should be allocated for downstream services in the future.

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