

# Green structures as ecosystem services providers in urban adaptation strategies to flooding

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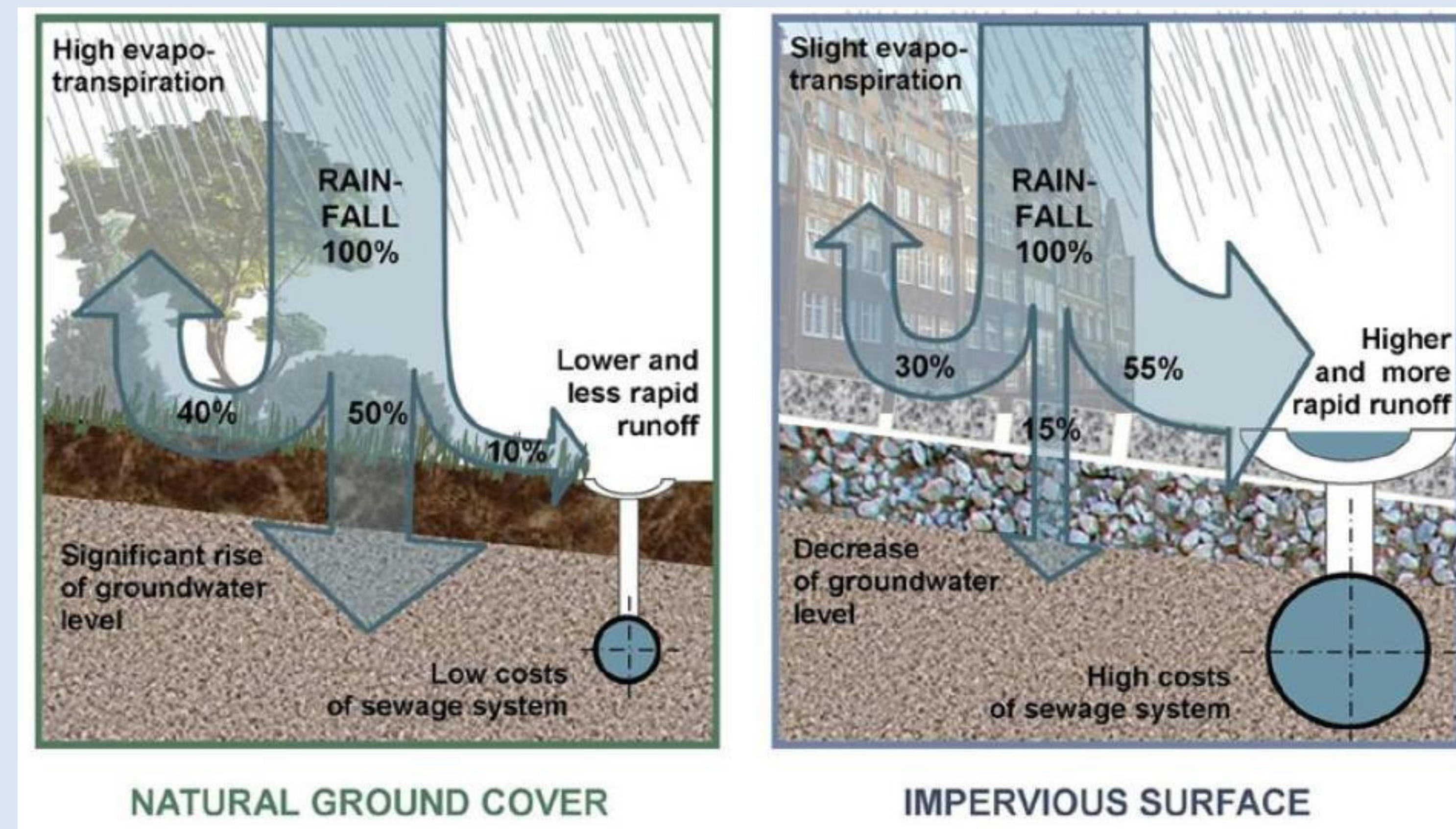
**Work Package 5 of the PLURISK Project** – Forecasting and management of extreme rainfall induced risks in the urban environment  
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## Context

- 3 key-concepts :
- ① Ecosystem services
  - ② Urban green structures
  - ③ Flood management

In our contemporary cities, floods are extreme events whose frequency increases due to climate change. These floods, which can be of various types, thus represent a central issue in any modern city.

The interest of this study is to focus on very specific LOCAL ecosystem services instead of studying GLOBAL ecosystem services. The study focuses on ecosystem services related to water regulation, such as water infiltration or runoff reduction for example. These services are provided by urban green structures.



Source : Januchta-Szostak, A., (2012). Urban water ecosystems services. *Sustainable Development Applications*, no 3.

## Objective

To provide a complementary vision to civil engineering in the fight against urban flooding. The interest is focused here on the green structures and their roles during extreme events.

## Methodology related to sub-objectives

### 1 Role of green structures in the regulation of water

How? Literature review about the key-concepts

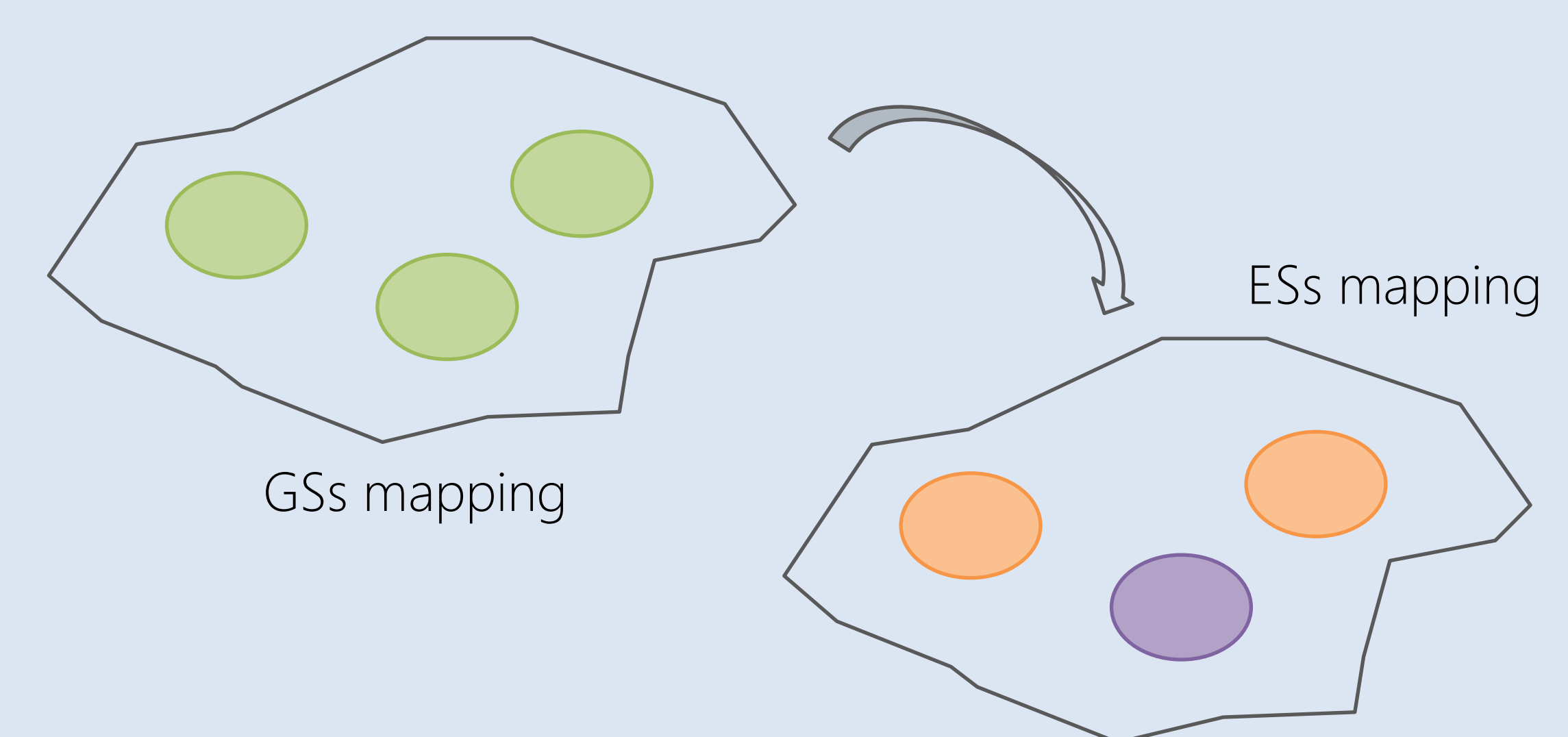
What? (A) Which definition for a green structure ?  
(B) Which typology for these green structures according to the aim of the study ?  
(C) Is it possible to summarize the data about water regulation for the different green structures ?

GSs / ESs	Runoff	Infiltration	...
Forest			
Grassland			
...			

### 2 Spatial structure of the green structures

How? Landscape ecology measurements and a comparative analysis between different case studies in Belgium

What? Identify a link between the spatial structure of these green structures, the ecosystem services provided and the hazard of urban flooding



### 3 Adaptation strategies

How? Expertise in landscape design and architecture

What? Propose some designs for high flood risk areas in order to increase the ecosystem services provided by green structures in these areas

