22ND FEBRUARY 2023

URBAN GREENUP

DEVELOPING KPI AND DATA COLLECTION PROGRAM FOR THE NBS IMPLEMENTATION AND MONITORING

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 730426

22ND FEBRUARY 2023

URBAN GREENUP

DEVELOPING KPI AND DATA COLLECTION PROGRAM FOR THE NBS IMPLEMENTATION AND MONITORING

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 730426

Table of Contents

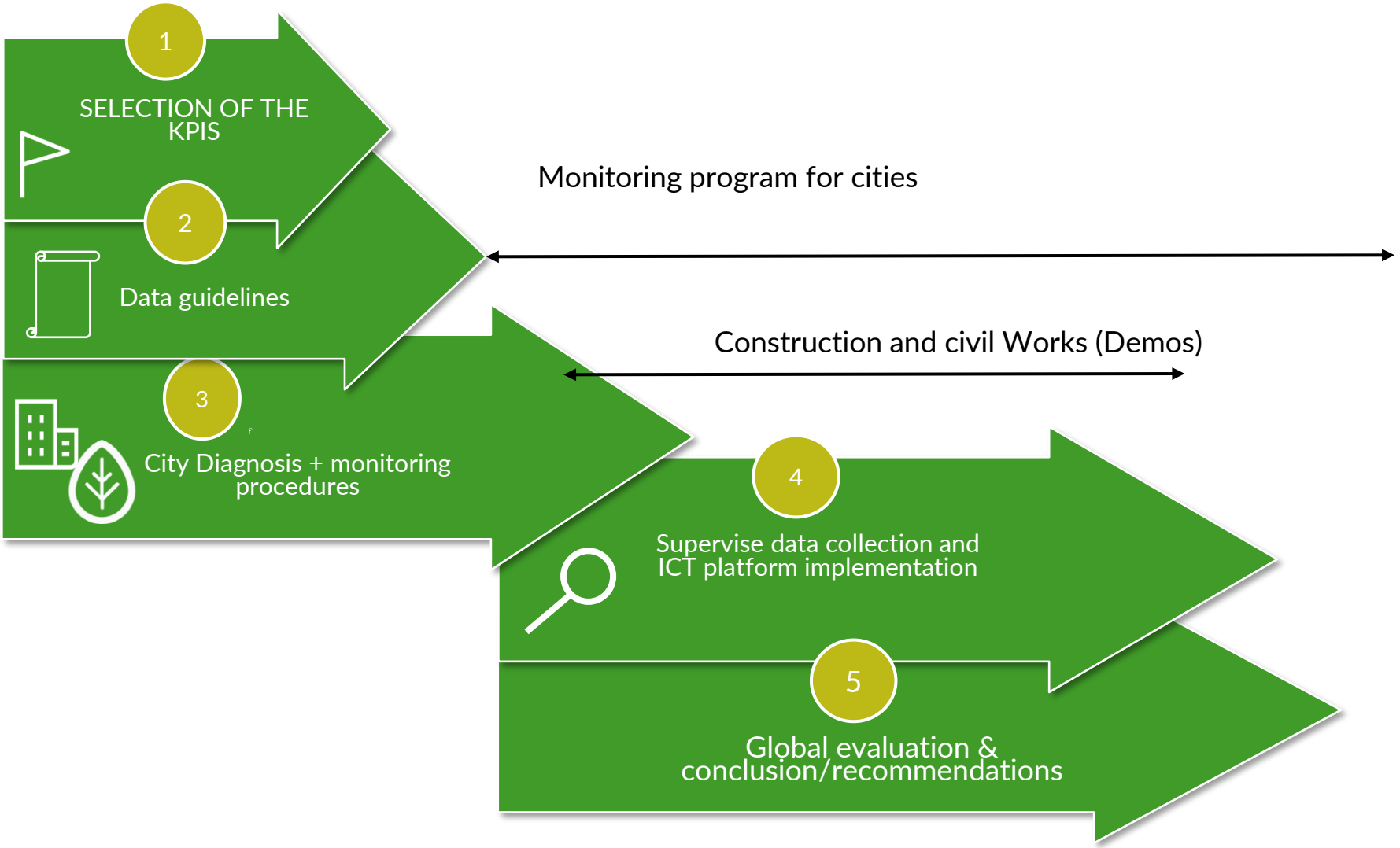
KPI SELECTION PROCESS

DATA COLLECTION PROCEDURES

OVERALL OBJECTIVE

- ❑ **Establish the monitoring and evaluation strategy**
- ❑ Robust monitoring scheme
- ❑ Monitor performance
- ❑ Assess the impact against challenges

PROCESS AND TIMING



GOALS

- SUPPORT MUNICIPALITIES IN THE SELECTION AND TECHNICAL DEFINITION OF MONITORING KPI
- DEFINE SPECIFICATIONS FOR AN OPEN & INTEROPERABLE ICT TOOLS
- DEFINE A MONITORING SCHEME FOR EVIDENCE-BASED DIAGNOSIC AND TO SUPPORT NBS IMPLEMENTATION
- SUPERVISE DATA COLLECTION AND UPTAKE
- DERIVE CONCLUSION Y RECOMMENDATIONS

URBAN
GREEN UP

Ayuntamiento de
Valladolid

CARTIF

İZMİR
BÜYÜKŞEHİR
BELEDİYESİ

EGE ÜNİVERSİTESİ
1955

DemirEnerji

UNIVERSITY OF
LIVERPOOL

Liverpool
City Council

BitNet
BitNet Bilişim Hizmetleri Ltd. Şti.

THE MERSEY
FOREST
more from trees

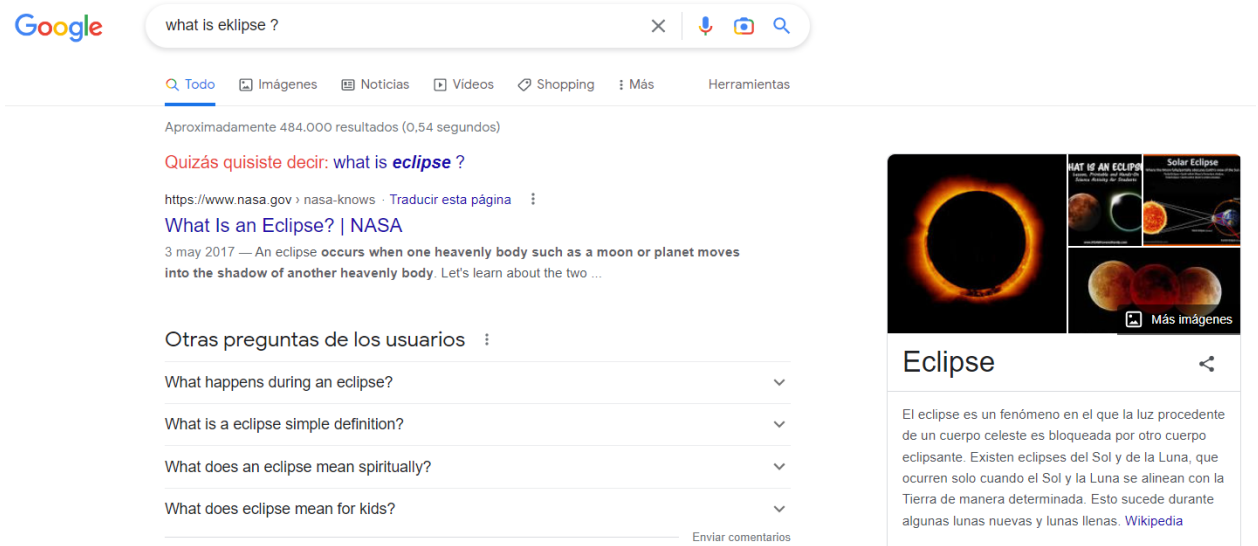
İZMİR INSTITUTE OF TECHNOLOGY
IZTECH

gmv

We didn't start the fire

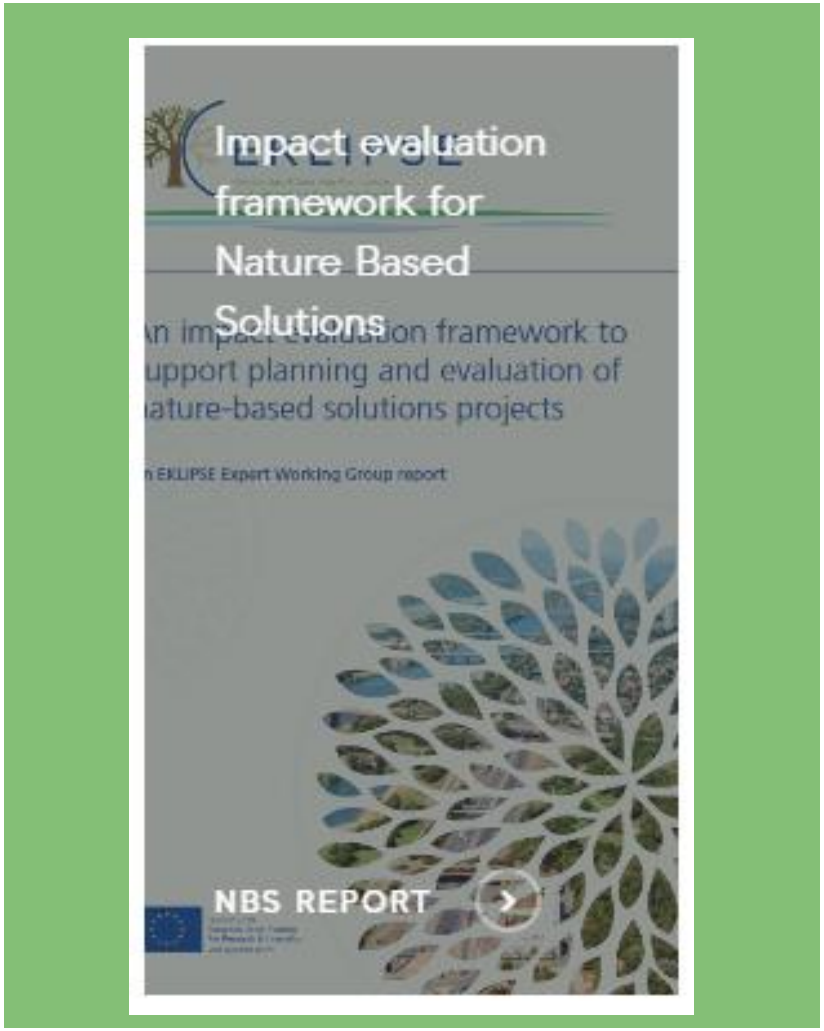
Log In to the KNOCK Forum
search...
EKLIPSE
Knowledge & Learning Mechanism
on Biodiversity & Ecosystem Services
Developing
a mechanism for
supporting better
decisions on our
environment based
on the best available
knowledge.
CALLS
REQUESTS & ACTIVITIES
EKLIPSE COMMUNITY
OUTPUTS
MAKING A DIFFERENCE
eklipse
Eklipse spreads its wings as the science-policy-society interface for biodiversity in Europe
Visit our new website: www.eklipse.eu

Log In to the KNOCK Forum
search...
EKLIPSE
Developing a mechanism for supporting better decisions on our environment based on the best available knowledge.
CALLS
EKLIPSE COMMUNITY
OUTPUTS
eklipse


Google
what is eklipse ?
Todo
Imágenes
Noticias
Vídeos
Shopping
Más
Herramientas
Aproximadamente 484.000 resultados (0,54 segundos)
Quizás quisiste decir: what is eclipse ?
https://www.nasa.gov › nasa-knows · Traducir esta página
What Is an Eclipse? | NASA
3 may 2017 — An eclipse occurs when one heavenly body such as a moon or planet moves into the shadow of another heavenly body. Let's learn about the two ...
Otras preguntas de los usuarios
What happens during an eclipse?
What is a eclipse simple definition?
What does an eclipse mean spiritually?
What does eclipse mean for kids?
Enviar comentarios
Solar Eclipse
Más imágenes
Eclipse
El eclipse es un fenómeno en el que la luz procedente de un cuerpo celeste es bloqueada por otro cuerpo eclipsante. Existen eclipses del Sol y de la Luna, que ocurren solo cuando el Sol y la Luna se alinean con la Tierra de manera determinada. Esto sucede durante algunas lunas nuevas y lunas llenas. Wikipedia
Etapas

EU project → → Knownledge hub

EU project → → Knownledge hub



CH	Nº	TYPE OF INDICATOR	KPI DEFINITION
Challenge 1	1	Environmental, Chemical	Tonnes of carbon removed or stored per unit area per unit time (ton CO2/Ha) (ton CO2/year). Total amount of carbon stored in vegetation (ton)
	2	Environmental, Physical	Decrease in mean or peak daytime local temperatures (°C)
	3		Heatwave risks (number of combined tropical nights (>20 °C) and hot days (>35 °C)
	4	Others	Use of *Star tools* to calculate projected maximum surface temperature reduction (°C)
Challenge 2	5	Physical indicators	Run-off coefficient in relation to precipitation quantities (mm/%)
	6		Absorption capacity of green surfaces, bioretention structures and single trees (m3/m2) (m3/tree)
	7		Temperature reduction in urban areas (°C, % of energy reduction for cooling)
	8		Areas (Ha) and population (inhab) exposed to flooding
	9	Chemical indicators (water quality)	Drinking water provision (m3 ha-1year-1)
	10		Water for irrigations purposes (m3 ha-1year-1)
	11	Economic indicators (benefits)	Volume of water removed from water treatment system
	12		Volume of water slowed down entering sewer system
Challenge 4	13	Social indicators (benefits)	Accessibility (measured as distance or time) of urban green spaces for population (Tamosiunas et al., 2014).
	14		Weighted recreation opportunities provided by Urban Green Infrastructure (Derkzen et al. 2015)
	15	Environmental (biological)	Production of food (ton/Ha/year)
	16		Increased connectivity to existing GI
	17		Pollinator species increase (number)
Challenge 5	18	Environmental (chemical)	Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted) concentration recorded ug/m3
	19		Trends in emissions NOX, SOX
	20	Economic	Monetary values: value of air pollution reduction; total monetary value of urban forests including air quality, run-off mitigation, energy savings, and increase in property values. use of GI val to calculate the value of air quality improvements
	21	Social (physiological)	Number of deaths from air, water and soil pollution and contamination (proposed indicator for SDG target 3.9)
	22		Air quality parameters NOx, VOC, PM etc
Ch 6	23	Urban green indicators (environmental, biological)	Accessibility: distribution, configuration, and diversity of green space and land use changes (multi-scale ;). - Green spaces quantity
	24	Socio-cultural indicators	Savings in energy use due to improved GI
Ch 7	25	Social	Perceptions of citizens on urban nature - Green spaces quality
Ch 8	26	Social Cohesion	Green intelligence awareness.
Challenge 9	27	Psychological indicators (Relaxation and restoration, sense of place, exploratory behaviour, socializing).	Noise reduction rates applied to UGI within a defined road buffer dB(A) m-2 vegetation unit
	28	Health indicators related to ecosystem service provision (Buffering of noise and air pollution, reduced heat, exposure to microflora).	Increase in walking and cycling in and around areas of interventions
Ch 10	29	Economic	Number of jobs created; gross value added

CHALLENGE 4: GREEN SPACE MANAGEMENT		
TYPE OF INDICATOR	**KPI DEFINITION**	**RELATED NBS**
Social indicators (benefits)	**Accessibility of urban green spaces for population (measured as distance or time, Tamosiunas et al., 2014).**	New green cycle lane and re-naturing existing bike lanes: Green cycle lane; Green resting areas; Cycle-pedestrian green paths. Vertical green interventions. Horizontal green interventions. Urban farming promotion: Urban orchard; Community composting; Small-scale urban livestock. Educational activities: Educational paths (A, C); Urban farming educational activities Tree related actions for Liverpool
Measured method	**KPI Unit**	**City**
Calculation of the shortest distance (linear) between the population in the NBS (line type), and the NBS location centroid. Results obtained in distance (m) and time (min). Tool: Geographic Information Systems.	(m) (min)	Valladolid Izmir
Sensor	**Calculi**	**External data source/ Website**
No sensor	Calculated with Geographic Information Systems (GIS)	Local Agenda 21 of Valladolid - Sustainability indicators.
Measured method	**KPI Unit**	**City**
GIS analysis of distance of NBS site from home, schools, and businesses. Land use cover will also be analysed in GIS to show what each area is comprised of, what different NBS are located within each site, and what socio-economic amenities can be identified. (links to recreation opportunities)	m2/km2	Liverpool
Sensor	**Calculi**	**External data source/ Website**
No Sensor	Calculated with Geographic Information Systems (GIS)	N/A

CHALLENGE 4: GREEN SPACE MANAGEMENT		
TYPE OF INDICATOR	**KPI DEFINITION**	**RELATED NBS**
Social indicators (benefits)	**Accessibility of urban green spaces for population (measured as distance or time, Tamosiunas et al., 2014).**	New green cycle lane and re-naturing existing bike lanes: Green cycle lane; Green resting areas; Cycle-pedestrian green paths. Vertical green interventions. Horizontal green interventions. Urban farming promotion: Urban orchard; Community composting; Small-scale urban livestock. Educational activities: Educational paths (A, C); Urban farming educational activities Tree related actions for Liverpool
Measured method	**KPI Unit**	**City**
Calculation of the shortest distance (linear) between the population in the NBS (line type), and the NBS location centroid. Results obtained in distance (m) and time (min). Tool: Geographic Information Systems.	(m) (min)	Valladolid Izmir
Sensor	**Calculi**	**External data source/ Website**
No sensor	Calculated with Geographic Information Systems (GIS)	Local Agenda 21 of Valladolid - Sustainability indicators.
Measured method	**KPI Unit**	**City**
GIS analysis of distance of NBS site from home, schools, and businesses. Land use cover will also be analysed in GIS to show what each area is comprised of, what different NBS are located within each site, and what socio-economic amenities can be identified. (links to recreation opportunities)	m2/km2	Liverpool
Sensor	**Calculi**	**External data source/ Website**
No Sensor	Calculated with Geographic Information Systems (GIS)	N/A

CHALLENGE 4: GREEN SPACE MANAGEMENT		
TYPE OF INDICATOR	**KPI DEFINITION**	**RELATED NBS**
Social indicators (benefits)	**Accessibility of urban green spaces for population (measured as distance or time, Tamosiunas et al., 2014).**	New green cycle lane and re-naturing existing bike lanes: Green cycle lane; Green resting areas; Cycle-pedestrian green paths. Vertical green interventions. Horizontal green interventions. Urban farming promotion: Urban orchard; Community composting; Small-scale urban livestock. Educational activities: Educational paths (A, C); Urban farming educational activities Tree related actions for Liverpool
Measured method	**KPI Unit**	**City**
Calculation of the shortest distance (linear) between the population in the NBS (line type), and the NBS location centroid. Results obtained in distance (m) and time (min). Tool: Geographic Information Systems.	(m) (min)	Valladolid Izmir
Sensor	**Calculi**	**External data source/ Website**
No sensor	Calculated with Geographic Information Systems (GIS)	Local Agenda 21 of Valladolid - Sustainability indicators.
Measured method	**KPI Unit**	**City**
GIS analysis of distance of NBS site from home, schools, and businesses. Land use cover will also be analysed in GIS to show what each area is comprised of, what different NBS are located within each site, and what socio-economic amenities can be identified. (links to recreation opportunities)	m2/km2	Liverpool
Sensor	**Calculi**	**External data source/ Website**
No Sensor	Calculated with Geographic Information Systems (GIS)	N/A

CHALLENGE 4: GREEN SPACE MANAGEMENT		
TYPE OF INDICATOR	**KPI DEFINITION**	**RELATED NBS**
Social indicators (benefits)	**Accessibility of urban green spaces for population (measured as distance or time, Tamosiunas et al., 2014).**	New green cycle lane and re-naturing existing bike lanes: Green cycle lane; Green resting areas; Cycle-pedestrian green paths. Vertical green interventions. Horizontal green interventions. Urban farming promotion: Urban orchard; Community composting; Small-scale urban livestock. Educational activities: Educational paths (A, C); Urban farming educational activities Tree related actions for Liverpool
Measured method	**KPI Unit**	**City**
Calculation of the shortest distance (linear) between the population in the NBS (line type), and the NBS location centroid. Results obtained in distance (m) and time (min). Tool: Geographic Information Systems.	(m) (min)	Valladolid Izmir
Sensor	**Calculi**	**External data source/ Website**
No sensor	Calculated with Geographic Information Systems (GIS)	Local Agenda 21 of Valladolid - Sustainability indicators.
Measured method	**KPI Unit**	**City**
GIS analysis of distance of NBS site from home, schools, and businesses. Land use cover will also be analysed in GIS to show what each area is comprised of, what different NBS are located within each site, and what socio-economic amenities can be identified. (links to recreation opportunities)	m2/km2	Liverpool
Sensor	**Calculi**	**External data source/ Website**
No Sensor	Calculated with Geographic Information Systems (GIS)	N/A

CHALLENGE 4: GREEN SPACE MANAGEMENT		
TYPE OF INDICATOR	**KPI DEFINITION**	**RELATED NBS**
Social indicators (benefits)	**Accessibility of urban green spaces for population (measured as distance or time, Tamosiunas et al., 2014).**	New green cycle lane and re-naturing existing bike lanes: Green cycle lane; Green resting areas; Cycle-pedestrian green paths. Vertical green interventions. Horizontal green interventions. Urban farming promotion: Urban orchard; Community composting; Small-scale urban livestock. Educational activities: Educational paths (A, C); Urban farming educational activities Tree related actions for Liverpool
Measured method	**KPI Unit**	**City**
Calculation of the shortest distance (linear) between the population in the NBS (line type), and the NBS location centroid. Results obtained in distance (m) and time (min). Tool: Geographic Information Systems.	(m) (min)	Valladolid Izmir
Sensor	**Calculi**	**External data source/ Website**
No sensor	Calculated with Geographic Information Systems (GIS)	Local Agenda 21 of Valladolid - Sustainability indicators.
Measured method	**KPI Unit**	**City**
GIS analysis of distance of NBS site from home, schools, and businesses. Land use cover will also be analysed in GIS to show what each area is comprised of, what different NBS are located within each site, and what socio-economic amenities can be identified. (links to recreation opportunities)	m2/km2	Liverpool
Sensor	**Calculi**	**External data source/ Website**
No Sensor	Calculated with Geographic Information Systems (GIS)	N/A

CHALLENGE 4: GREEN SPACE MANAGEMENT		
TYPE OF INDICATOR	**KPI DEFINITION**	**RELATED NBS**
Social indicators (benefits)	**Accessibility of urban green spaces for population (measured as distance or time, Tamosiunas et al., 2014).**	New green cycle lane and re-naturing existing bike lanes: Green cycle lane; Green resting areas; Cycle-pedestrian green paths. Vertical green interventions. Horizontal green interventions. Urban farming promotion: Urban orchard; Community composting; Small-scale urban livestock. Educational activities: Educational paths (A, C); Urban farming educational activities Tree related actions for Liverpool
Measured method	**KPI Unit**	**City**
Calculation of the shortest distance (linear) between the population in the NBS (line type), and the NBS location centroid. Results obtained in distance (m) and time (min). Tool: Geographic Information Systems.	(m) (min)	Valladolid Izmir
Sensor	**Calculi**	**External data source/ Website**
No sensor	Calculated with Geographic Information Systems (GIS)	Local Agenda 21 of Valladolid - Sustainability indicators.
Measured method	**KPI Unit**	**City**
GIS analysis of distance of NBS site from home, schools, and businesses. Land use cover will also be analysed in GIS to show what each area is comprised of, what different NBS are located within each site, and what socio-economic amenities can be identified. (links to recreation opportunities)	m2/km2	Liverpool
Sensor	**Calculi**	**External data source/ Website**
No Sensor	Calculated with Geographic Information Systems (GIS)	N/A

CHALLENGE 4: GREEN SPACE MANAGEMENT		
TYPE OF INDICATOR	**KPI DEFINITION**	**RELATED NBS**
Social indicators (benefits)	**Accessibility of urban green spaces for population (measured as distance or time, Tamosiunas et al., 2014).**	New green cycle lane and re-naturing existing bike lanes: Green cycle lane; Green resting areas; Cycle-pedestrian green paths. Vertical green interventions. Horizontal green interventions. Urban farming promotion: Urban orchard; Community composting; Small-scale urban livestock. Educational activities: Educational paths (A, C); Urban farming educational activities Tree related actions for Liverpool
Measured method	**KPI Unit**	**City**
Calculation of the shortest distance (linear) between the population in the NBS (line type), and the NBS location centroid. Results obtained in distance (m) and time (min). Tool: Geographic Information Systems.	(m) (min)	Valladolid Izmir
Sensor	**Calculi**	**External data source/ Website**
No sensor	Calculated with Geographic Information Systems (GIS)	Local Agenda 21 of Valladolid - Sustainability indicators.
Measured method	**KPI Unit**	**City**
GIS analysis of distance of NBS site from home, schools, and businesses. Land use cover will also be analysed in GIS to show what each area is comprised of, what different NBS are located within each site, and what socio-economic amenities can be identified. (links to recreation opportunities)	m2/km2	Liverpool
Sensor	**Calculi**	**External data source/ Website**
No Sensor	Calculated with Geographic Information Systems (GIS)	N/A

CHALLENGE 4: GREEN SPACE MANAGEMENT		
TYPE OF INDICATOR	**KPI DEFINITION**	**RELATED NBS**
Social indicators (benefits)	**Accessibility of urban green spaces for population (measured as distance or time, Tamosiunas et al., 2014).**	New green cycle lane and re-naturing existing bike lanes: Green cycle lane; Green resting areas; Cycle-pedestrian green paths. Vertical green interventions. Horizontal green interventions. Urban farming promotion: Urban orchard; Community composting; Small-scale urban livestock. Educational activities: Educational paths (A, C); Urban farming educational activities Tree related actions for Liverpool
Measured method	**KPI Unit**	**City**
Calculation of the shortest distance (linear) between the population in the NBS (line type), and the NBS location centroid. Results obtained in distance (m) and time (min). Tool: Geographic Information Systems.	(m) (min)	Valladolid Izmir
Sensor	**Calculi**	**External data source/ Website**
No sensor	Calculated with Geographic Information Systems (GIS)	Local Agenda 21 of Valladolid - Sustainability indicators.
Measured method	**KPI Unit**	**City**
GIS analysis of distance of NBS site from home, schools, and businesses. Land use cover will also be analysed in GIS to show what each area is comprised of, what different NBS are located within each site, and what socio-economic amenities can be identified. (links to recreation opportunities)	m2/km2	Liverpool
Sensor	**Calculi**	**External data source/ Website**
No Sensor	Calculated with Geographic Information Systems (GIS)	N/A

CHALLENGE 4: GREEN SPACE MANAGEMENT		
TYPE OF INDICATOR	**KPI DEFINITION**	**RELATED NBS**
Social indicators (benefits)	**Accessibility of urban green spaces for population (measured as distance or time, Tamosiunas et al., 2014).**	New green cycle lane and re-naturing existing bike lanes: Green cycle lane; Green resting areas; Cycle-pedestrian green paths. Vertical green interventions. Horizontal green interventions. Urban farming promotion: Urban orchard; Community composting; Small-scale urban livestock. Educational activities: Educational paths (A, C); Urban farming educational activities Tree related actions for Liverpool
Measured method	**KPI Unit**	**City**
Calculation of the shortest distance (linear) between the population in the NBS (line type), and the NBS location centroid. Results obtained in distance (m) and time (min). Tool: Geographic Information Systems.	(m) (min)	Valladolid Izmir
Sensor	**Calculi**	**External data source/ Website**
No sensor	Calculated with Geographic Information Systems (GIS)	Local Agenda 21 of Valladolid - Sustainability indicators.
Measured method	**KPI Unit**	**City**
GIS analysis of distance of NBS site from home, schools, and businesses. Land use cover will also be analysed in GIS to show what each area is comprised of, what different NBS are located within each site, and what socio-economic amenities can be identified. (links to recreation opportunities)	m2/km2	Liverpool
Sensor	**Calculi**	**External data source/ Website**
No Sensor	Calculated with Geographic Information Systems (GIS)	N/A

CHALLENGE 4: GREEN SPACE MANAGEMENT		
TYPE OF INDICATOR	**KPI DEFINITION**	**RELATED NBS**
Social indicators (benefits)	**Accessibility of urban green spaces for population (measured as distance or time, Tamosiunas et al., 2014).**	New green cycle lane and re-naturing existing bike lanes: Green cycle lane; Green resting areas; Cycle-pedestrian green paths. Vertical green interventions. Horizontal green interventions. Urban farming promotion: Urban orchard; Community composting; Small-scale urban livestock. Educational activities: Educational paths (A, C); Urban farming educational activities Tree related actions for Liverpool
Measured method	**KPI Unit**	**City**
Calculation of the shortest distance (linear) between the population in the NBS (line type), and the NBS location centroid. Results obtained in distance (m) and time (min). Tool: Geographic Information Systems.	(m) (min)	Valladolid Izmir
Sensor	**Calculi**	**External data source/ Website**
No sensor	Calculated with Geographic Information Systems (GIS)	Local Agenda 21 of Valladolid - Sustainability indicators.
Measured method	**KPI Unit**	**City**
GIS analysis of distance of NBS site from home, schools, and businesses. Land use cover will also be analysed in GIS to show what each area is comprised of, what different NBS are located within each site, and what socio-economic amenities can be identified. (links to recreation opportunities)	m2/km2	Liverpool
Sensor	**Calculi**	**External data source/ Website**
No Sensor	Calculated with Geographic Information Systems (GIS)	N/A

CHALLENGE 4: GREEN SPACE MANAGEMENT		
TYPE OF INDICATOR	**KPI DEFINITION**	**RELATED NBS**
Social indicators (benefits)	**Accessibility of urban green spaces for population (measured as distance or time, Tamosiunas et al., 2014).**	New green cycle lane and re-naturing existing bike lanes: Green cycle lane; Green resting areas; Cycle-pedestrian green paths. Vertical green interventions. Horizontal green interventions. Urban farming promotion: Urban orchard; Community composting; Small-scale urban livestock. Educational activities: Educational paths (A, C); Urban farming educational activities Tree related actions for Liverpool
Measured method	**KPI Unit**	**City**
Calculation of the shortest distance (linear) between the population in the NBS (line type), and the NBS location centroid. Results obtained in distance (m) and time (min). Tool: Geographic Information Systems.	(m) (min)	Valladolid Izmir
Sensor	**Calculi**	**External data source/ Website**
No sensor	Calculated with Geographic Information Systems (GIS)	Local Agenda 21 of Valladolid - Sustainability indicators.
Measured method	**KPI Unit**	**City**
GIS analysis of distance of NBS site from home, schools, and businesses. Land use cover will also be analysed in GIS to show what each area is comprised of, what different NBS are located within each site, and what socio-economic amenities can be identified. (links to recreation opportunities)	m2/km2	Liverpool
Sensor	**Calculi**	**External data source/ Website**
No Sensor	Calculated with Geographic Information Systems (GIS)	N/A

CHALLENGE 4: GREEN SPACE MANAGEMENT		
TYPE OF INDICATOR	**KPI DEFINITION**	**RELATED NBS**
Social indicators (benefits)	**Accessibility of urban green spaces for population (measured as distance or time, Tamosiunas et al., 2014).**	New green cycle lane and re-naturing existing bike lanes: Green cycle lane; Green resting areas; Cycle-pedestrian green paths. Vertical green interventions. Horizontal green interventions. Urban farming promotion: Urban orchard; Community composting; Small-scale urban livestock. Educational activities: Educational paths (A, C); Urban farming educational activities Tree related actions for Liverpool
Measured method	**KPI Unit**	**City**
Calculation of the shortest distance (linear) between the population in the NBS (line type), and the NBS location centroid. Results obtained in distance (m) and time (min). Tool: Geographic Information Systems.	(m) (min)	Valladolid Izmir
Sensor	**Calculi**	**External data source/ Website**
No sensor	Calculated with Geographic Information Systems (GIS)	Local Agenda 21 of Valladolid - Sustainability indicators.
Measured method	**KPI Unit**	**City**
GIS analysis of distance of NBS site from home, schools, and businesses. Land use cover will also be analysed in GIS to show what each area is comprised of, what different NBS are located within each site, and what socio-economic amenities can be identified. (links to recreation opportunities)	m2/km2	Liverpool
Sensor	**Calculi**	**External data source/ Website**
No Sensor	Calculated with Geographic Information Systems (GIS)	N/A

CHALLENGE 4: GREEN SPACE MANAGEMENT		
TYPE OF INDICATOR	**KPI DEFINITION**	**RELATED NBS**
Social indicators (benefits)	**Accessibility of urban green spaces for population (measured as distance or time, Tamosiunas et al., 2014).**	New green cycle lane and re-naturing existing bike lanes: Green cycle lane; Green resting areas; Cycle-pedestrian green paths. Vertical green interventions. Horizontal green interventions. Urban farming promotion: Urban orchard; Community composting; Small-scale urban livestock. Educational activities: Educational paths (A, C); Urban farming educational activities Tree related actions for Liverpool
Measured method	**KPI Unit**	**City**
Calculation of the shortest distance (linear) between the population in the NBS (line type), and the NBS location centroid. Results obtained in distance (m) and time (min). Tool: Geographic Information Systems.	(m) (min)	Valladolid Izmir
Sensor	**Calculi**	**External data source/ Website**
No sensor	Calculated with Geographic Information Systems (GIS)	Local Agenda 21 of Valladolid - Sustainability indicators.
Measured method	**KPI Unit**	**City**
GIS analysis of distance of NBS site from home, schools, and businesses. Land use cover will also be analysed in GIS to show what each area is comprised of, what different NBS are located within each site, and what socio-economic amenities can be identified. (links to recreation opportunities)	m2/km2	Liverpool
Sensor	**Calculi**	**External data source/ Website**
No Sensor	Calculated with Geographic Information Systems (GIS)	N/A

CHALLENGE 4: GREEN SPACE MANAGEMENT		
TYPE OF INDICATOR	**KPI DEFINITION**	**RELATED NBS**
Social indicators (benefits)	**Accessibility of urban green spaces for population (measured as distance or time, Tamosiunas et al., 2014).**	New green cycle lane and re-naturing existing bike lanes: Green cycle lane; Green resting areas; Cycle-pedestrian green paths. Vertical green interventions. Horizontal green interventions. Urban farming promotion: Urban orchard; Community composting; Small-scale urban livestock. Educational activities: Educational paths (A, C); Urban farming educational activities Tree related actions for Liverpool
Measured method	**KPI Unit**	**City**
Calculation of the shortest distance (linear) between the population in the NBS (line type), and the NBS location centroid. Results obtained in distance (m) and time (min). Tool: Geographic Information Systems.	(m) (min)	Valladolid Izmir
Sensor	**Calculi**	**External data source/ Website**
No sensor	Calculated with Geographic Information Systems (GIS)	Local Agenda 21 of Valladolid - Sustainability indicators.
Measured method	**KPI Unit**	**City**
GIS analysis of distance of NBS site from home, schools, and businesses. Land use cover will also be analysed in GIS to show what each area is comprised of, what different NBS are located within each site, and what socio-economic amenities can be identified. (links to recreation opportunities)	m2/km2	Liverpool
Sensor	**Calculi**	**External data source/ Website**
No Sensor	Calculated with Geographic Information Systems (GIS)	N/A

CHALLENGE 4: GREEN SPACE MANAGEMENT		
TYPE OF INDICATOR	**KPI DEFINITION**	**RELATED NBS**
Social indicators (benefits)	**Accessibility of urban green spaces for population (measured as distance or time, Tamosiunas et al., 2014).**	New green cycle lane and re-naturing existing bike lanes: Green cycle lane; Green resting areas; Cycle-pedestrian green paths. Vertical green interventions. Horizontal green interventions. Urban farming promotion: Urban orchard; Community composting; Small-scale urban livestock. Educational activities: Educational paths (A, C); Urban farming educational activities Tree related actions for Liverpool
Measured method	**KPI Unit**	**City**
Calculation of the shortest distance (linear) between the population in the NBS (line type), and the NBS location centroid. Results obtained in distance (m) and time (min). Tool: Geographic Information Systems.	(m) (min)	Valladolid Izmir
Sensor	**Calculi**	**External data source/ Website**
No sensor	Calculated with Geographic Information Systems (GIS)	Local Agenda 21 of Valladolid - Sustainability indicators.
Measured method	**KPI Unit**	**City**
GIS analysis of distance of NBS site from home, schools, and businesses. Land use cover will also be analysed in GIS to show what each area is comprised of, what different NBS are located within each site, and what socio-economic amenities can be identified. (links to recreation opportunities)	m2/km2	Liverpool
Sensor	**Calculi**	**External data source/ Website**
No Sensor	Calculated with Geographic Information Systems (GIS)	N/A

ALREADY IN USE

WORTH EXPLORING

PRACTICAL

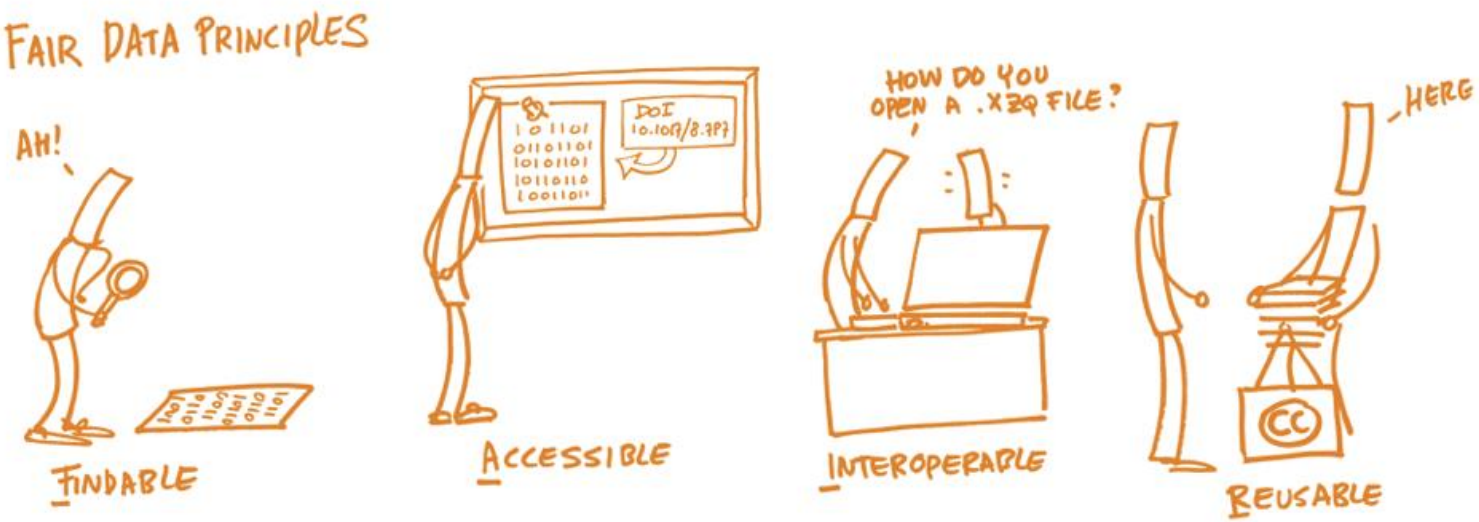
LONG RUN

SUSTAINABLE

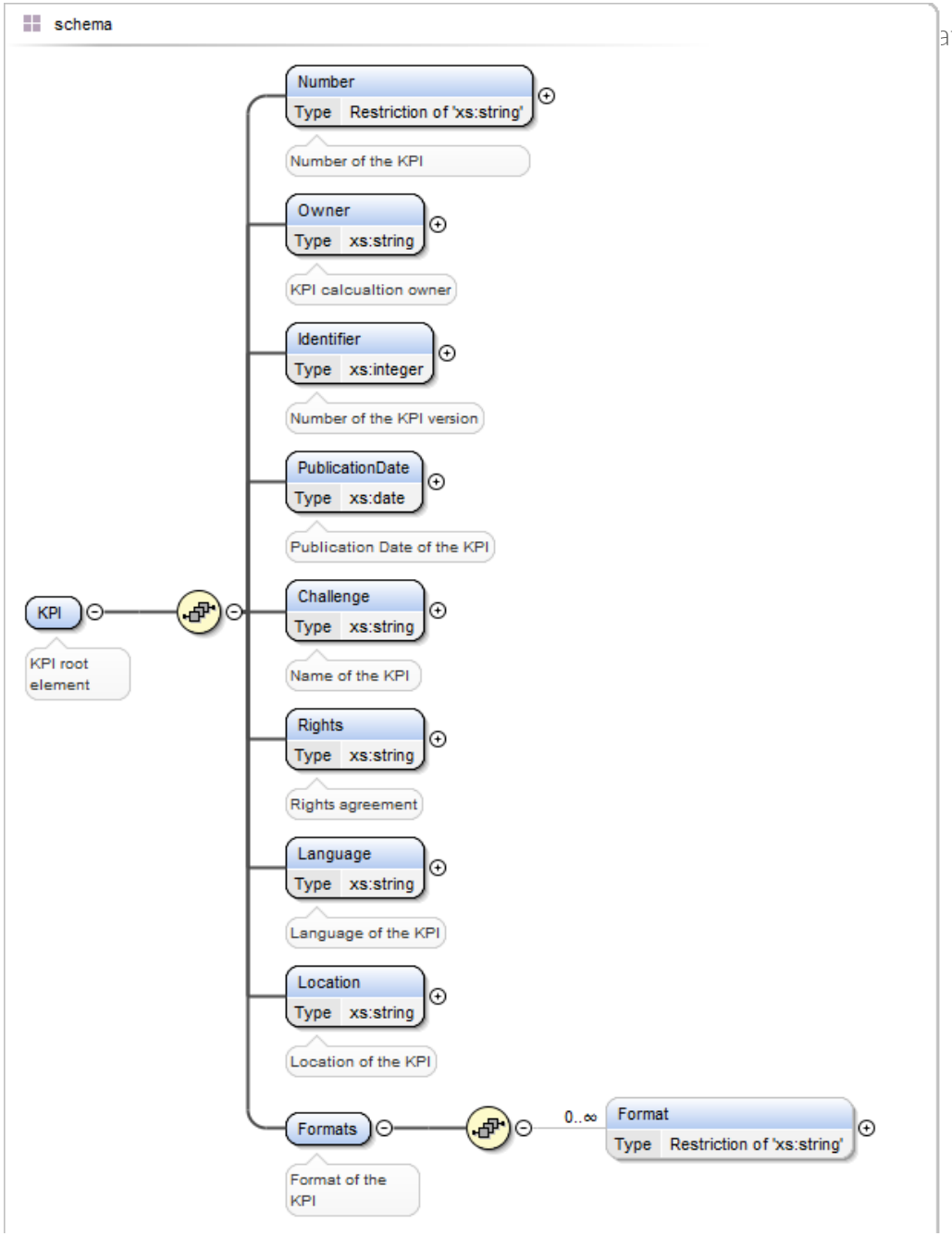
Table of Contents

DATA COLLECTION PROCEDURES

F	A	I	R
FINDABLE	ACCESSIBLE	INTEROPERABLE	REUSABLE

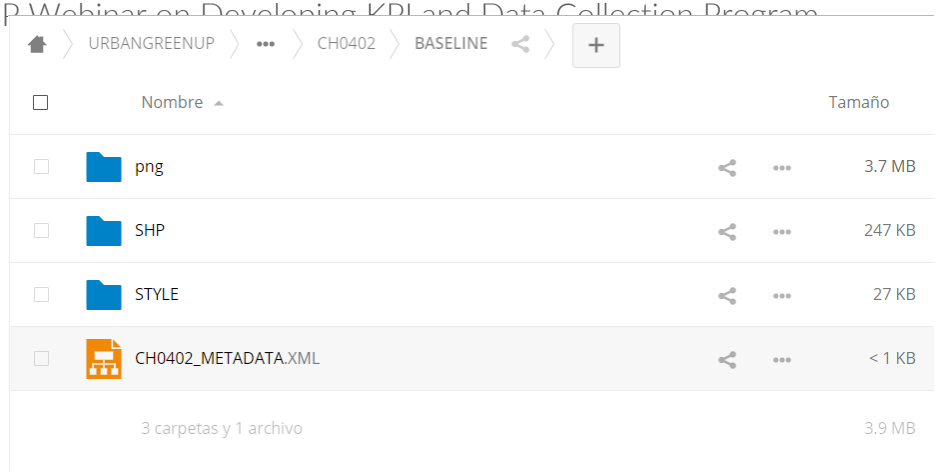


FINDABLE


schema
Number
Type Restriction of 'xs:string'
Number of the KPI
Owner
Type xs:string
KPI calcualtion owner
Identifier
Type xs:integer
Number of the KPI version
PublicationDate
Type xs:date
Publication Date of the KPI
KPI
KPI root element
Challenge
Type xs:string
Name of the KPI
Rights
Type xs:string
Rights agreement
Language
Type xs:string
Language of the KPI
Location
Type xs:string
Location of the KPI
Formats
Format of the KPI
0..∞
Format
Type Restriction of 'xs:string'

KPI DELIVERY PROCEDURE

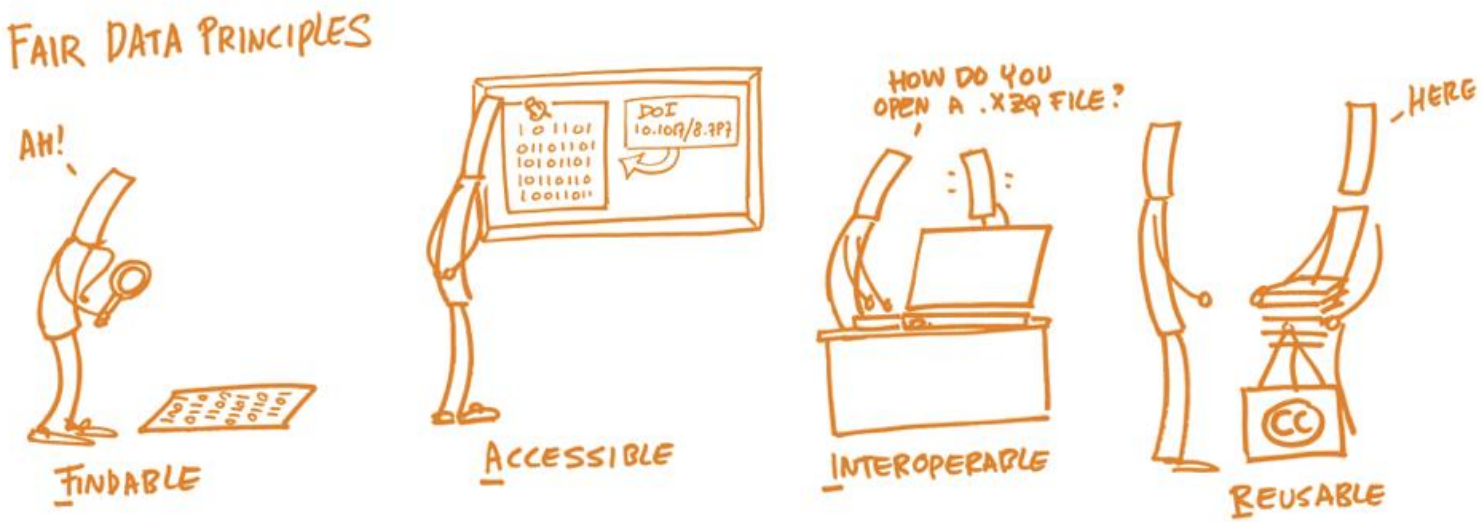
METADATA FILE



CH0402_METADATA.XML

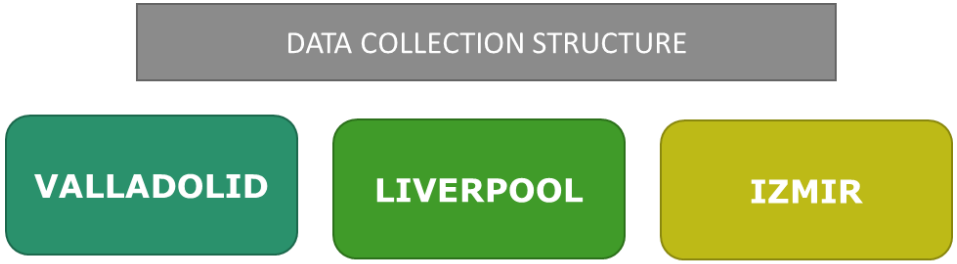
```xml
<?xml version="1.0" encoding="UTF-8"?>
<KPI>
    <Number>CH0402</Number>
    <Owner>CARTIF</Owner>
    <Identifier>00</Identifier>
    <PublicationDate>2021-02-11</PublicationDate>
    <Challenge> 04 GREEN SPACE MANAGEMENT </Challenge>
    <Rights>URBAN GreenUP</Rights>
    <Language>ENGLISH </Language>
    <Location>VALLADOLID</Location>
    <Formats>
        <Format>QLR</Format>
        <Format>SHP</Format>
        <Format>png</Format>
    </Formats>
</KPI>
```

F	A	I	R
FINDABLE	ACCESSIBLE	INTEROPERABLE	REUSABLE



Data Collection Procedure

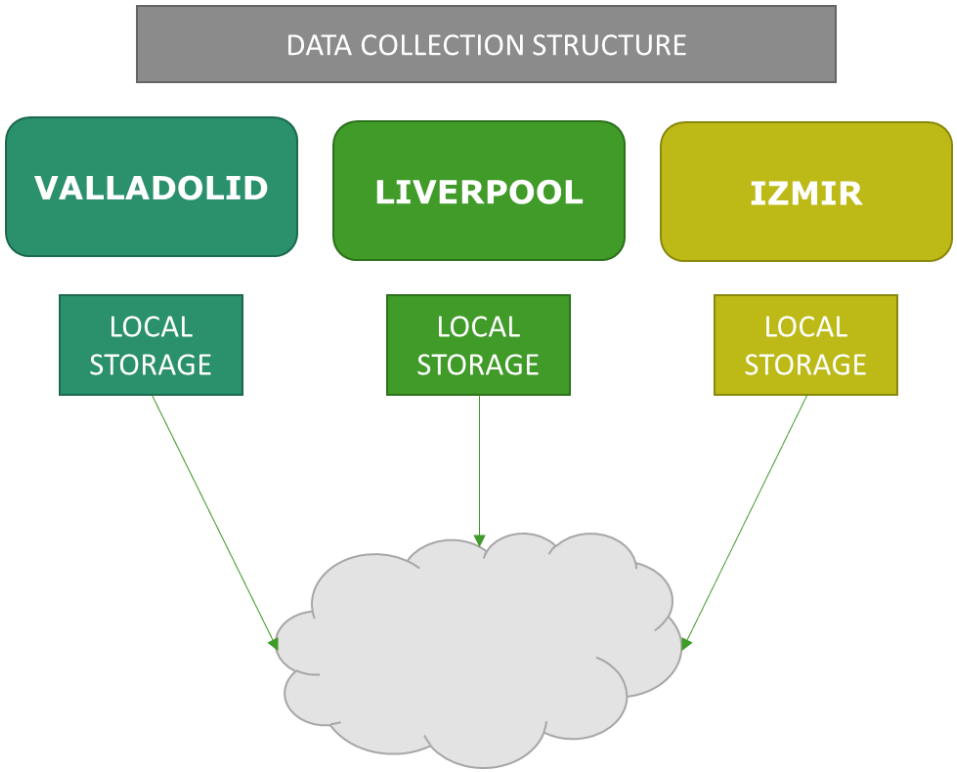
ACCESSIBLE



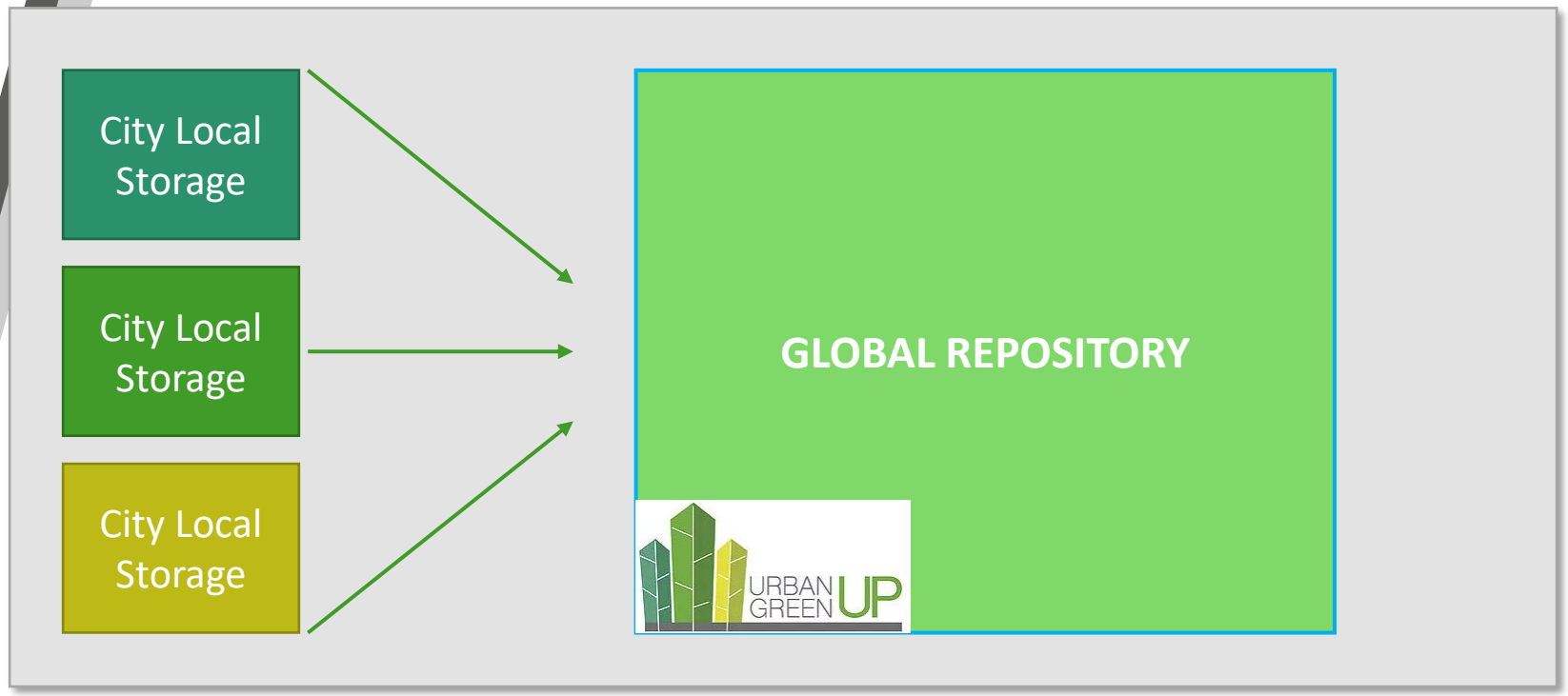
Where each city have their own data storage locally and be responsible for their data

Data Collection Procedure

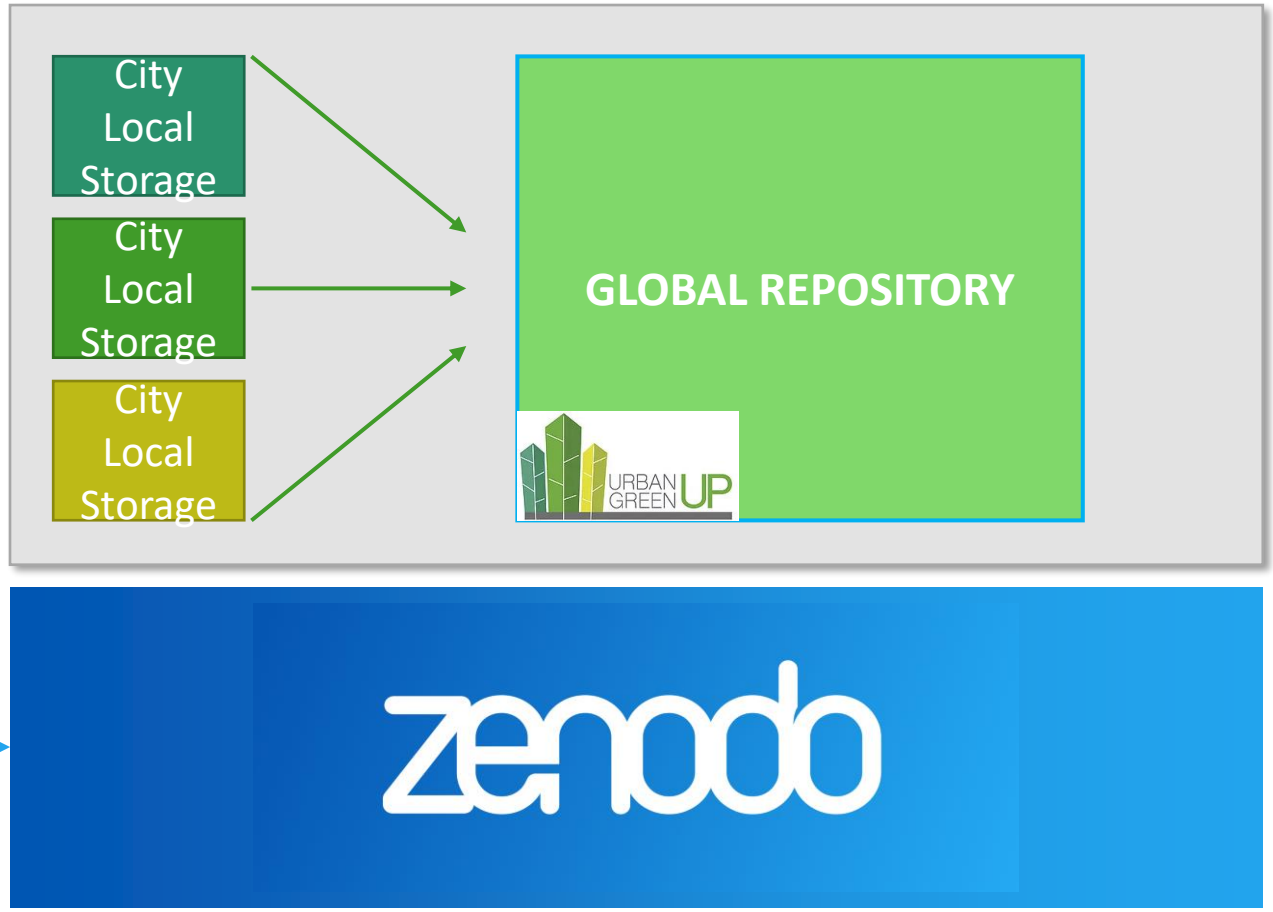
INTEROPERABLE



Then through a manual drag and drop procedure performed by each city, upload the data to be shared in a global repository.


City Local Storage
City Local Storage
City Local Storage
GLOBAL REPOSITORY
URBAN GREEN UP

ALSO


City Local Storage
City Local Storage
City Local Storage
GLOBAL REPOSITORY
URBAN GREEN UP
zenodo

What is Zenodo?

- General-purpose open access repository
- Allows to upload files up to 50 GB
- Provides DOI for citations
- Linked to GitHub and Binder
- Is free

can select a community.

on Zenodo's front-page.

FINDABLE | ACCESSIBLE | INTEROPERABLE | REUSABLE