

22ND FEBRUARY 2023 -
EXTERNALWEBINAR

ALICIA VILLAZÁN
VALLADOLID CITY COUNCIL

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

Time (TBD)	Topic	Speaker
10:00 – 10:05	Reception	Duc Trinh Tran **(RMIT)**/ João Barata/Pablo Bustamante **(SPI)**
10:05 – 10:15	*KPI Selection Process*	Jesús Ortuño **(GMV)**
10:15 – 10:25	*Data Collection Procedures*	Jesús Ortuño **(GMV)**
10:25 – 10:35	Valladolid Exposition	Alicia Villazan **(VAL)**
10:35 – 10:45	Liverpool Exposition	Stella Shackel **(CFT)**
10:45 – 10:55	Izmir Exposition	Esra Demir **(DEM)**
10:55 – 11:10	Q&A and Final Conclusions	Duc Trinh Tran **(RMIT)**/ João Barata/Pablo Bustamante **(SPI)**

URBAN GREEN UP

MONITORING VALLADOLID DEMO (KPIS)

CARTIF

Ayuntamiento de Valladolid

singular green

FUNDACIÓN PÚBLICA ANDALUZA CENTRO DE LAS NUEVAS TECNOLOGÍAS DEL AGUA (CENTA)
Consejería de Agricultura, Ganadería, Pesca y Desarrollo Sostenible

LEITAT managing technologies

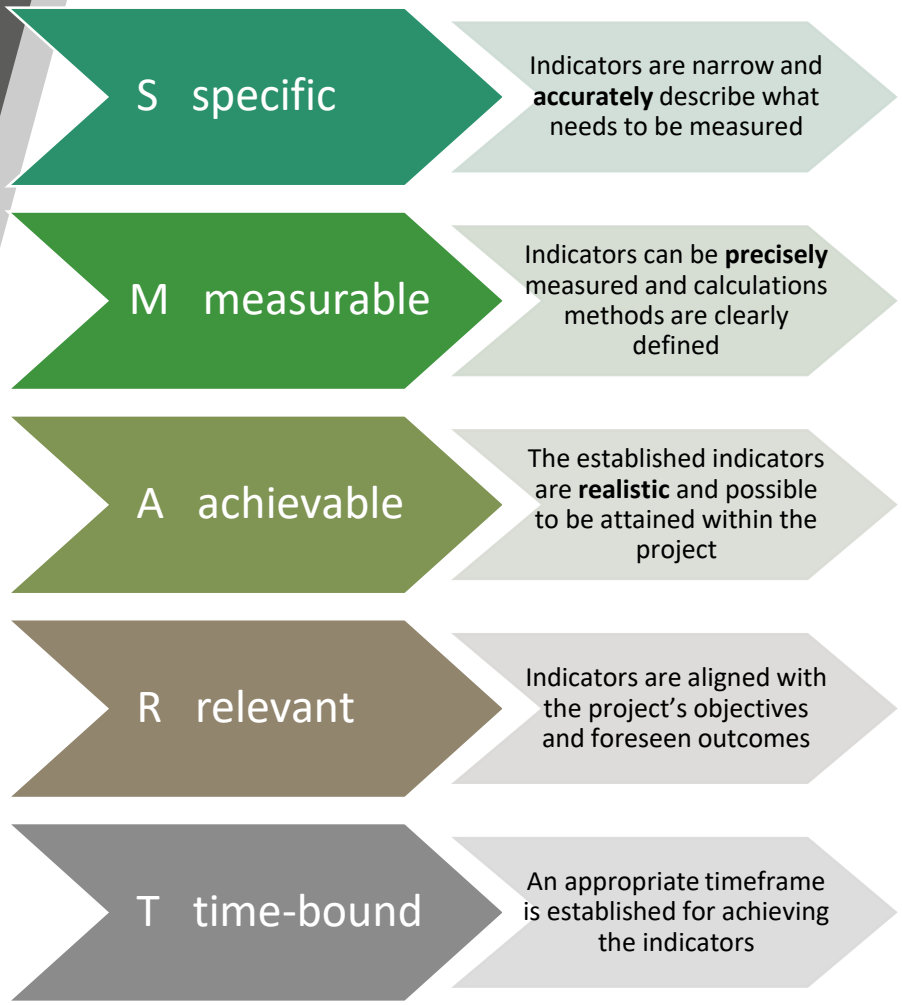
gmv INNOVATING SOLUTIONS

KPIS MONITORING VALLADOLID

46 KPIs

CHA	TYPE OF	nº	Code	KPI	Webinar KPIs
CHALLENGE 1: Climate	Chemical	1	CH010	Ton C02 CARBON REMOVED per Ha	Modelling data
		2	CH010	Ton C02 CARBON REMOVED per year	Modelling data
	Physical	3	CH010	TEMPERATURE DECREASE	Quantitative
		4	CH010	HEATWAVE RISK	Quantitative
	Economic	5	CH011	ENERGY SAVINGS FROM REDUCED BUILDING	Modelling data
		6	CH011	CARBON SAVINGS FROM REDUCED BUILDING	Modelling data
CHALLENGE 2: Water Management	Physical indicators	7	CH020	RUN-OFF COEFFICIENT	Modelling data
		8	CH020	ABSORPTION CAPACITY (m3/m2)	Modelling data
		9	CH020	ABSORPTION CAPACITY (m3/tree)	Modelling data
		10	CH020	TEMPERATURE REDUCTION	Modelling data
		11	CH020	INTERCEPTED RAINFALL	Modelling data
	Chemical	12	CH021	NUTRIENT ABATEMENT (Chemical Oxygen	Quantitative
		13	CH021	NUTRIENT ABATEMENT (Biochemical Oxygen	Quantitative
		14	CH021	NUTRIENT ABATEMENT (Total Solids, TSS)	Quantitative
	Socioeconomic	15	CH021	IRRIGATION WATER PROVISION	Quantitative
		16	CH021	WATER REMOVED FROM THE WATER	Modelling data
	Economic	17	CH021	SAVINGS IN TREATMENT OF STORMWATER	Modelling data
CHALLENGE 4: Green Space Management	Spatial	18	CH040	GREEN SPACE DISTRIBUTION (m2/capita)	Modelling data
		19	CH040	GREEN SPACE DISTRIBUTION (km cycle	Modelling data
		20	CH040	GREEN SPACE ACCESSIBILITY	Modelling data
		21	CH040	GREEN INFRASTRUCTURE CONNECTIVITY	Modelling data
	Social	22	CH040	RECREATIONAL VALUE	Socio-economic
		23	CH041	ELDERLY PEOPLE LIFE QUALITY	Socio-economic
		24	CH041	CONNECTIVITY PERCEPTION	Socio-economic
		25	CH041	FOOD PRODUCTION	Modelling data
	Biological	26	CH041	POLLINATOR SPECIES INCREASE	Quantitative
		27	CH041	GREEN AREAS SUSTAINABILITY	Modelling data
CHALLENGE 5: Air Quali	Physical	28	CH0501	ANNUAL MEAN LEVELS OF FINE PM2.5	Quantitative
		29	CH0502	ANNUAL MEAN LEVELS OF FINE PM10	Quantitative
		30	CH0508	EMMISIONS TRENDS of NO2	Quantitative
		31	CH0505	ANNUAL MEAN LEVELS OF O3	Quantitative
	Economic	32	CH0507	AIR QUALITY MONETARY VALUES	Modelling data
CHA LLE	Socio-	33	CH060	BENEFITS FROM INTERVENTIONS	Socio-economic
	Economic	34	CH060	SAVINGS IN ENERGY USE DUE TO IMPROVED GI	Modelling data
CHA LLE	Social	35	CH070	OPENNESS	Socio-economic
		36	CH070	CITIZEN PERCEPTION	Socio-economic
CHALL ENGE	Social	37	CH080	CRIME REDUCTION	Socio-economic
	Social cohesion	38	CH0802	GREEN INTELLIGENCE AWARENESS (Educational	Socio-economic
		39	CH0803	GREEN INTELLIGENCE AWARENESS	Socio-economic
CHALL ENGE	Psychologic	40	CH090	NOISE REDUCTION	Quantitative
	Health	41	CH090	WALKING AREA INCREASE	Quantitative
		42	CH090	CYCLING AREA INCREASE	Quantitative
CHALLEN GE 10:	Economic	43	CH100	TAX REDUCTION	Quantitative
		44	CH100	JOB CREATION	Quantitative
		45	CH100	BUSINESS REVENUE	Quantitative
		46	CH100	CONSUMPTION BENEFITS	Quantitative

GENERALITIES for cities



KPIs

- Reliable indicators, accurate results.
- Expected results (benefits)
- Easy to communicate.
- Visible.

KPIs Quantitative data

CH0105| Mean/Max Temp. Decrease

CH02-11-12-13| Nutrient abatement

CH0413| Pollinator species increase

CH0105 | Mean/Max Temp. Decrease

CH0105	TEMPERATURE DECREASE IN MEAN AND PEAK		
Definition	Decrease in mean or peak daytime local temperatures		
NBS	Green shady structures, Green Façade, Green covering shelter, Shade Trees, Cooling trees		
Measured method	Measure air temperature and relative humidity at sampling points at a range of radii from NBS locations both pre- and post-intervention		
Unit	˚C	**Output**	Database, charts

EQUIPMENT:

- Real measurements with simple equipment: thermometer.

RESULTS:

- May not clearly reflect what is expected (reduction in temperature).

KPI Summary results

Period	Green façade	Green covering shelter	Green canopies
2019	**-1,45 ˚C**	**0,66 ˚C**	**0,16 ˚C**
2020	-1,44 ˚C	2,46 ˚C	**1,33 ˚C**
2021	-1,29 ˚C	0,57 ˚C	-0,72 ˚C

- [bold] Data for the baseline calculation.
- Green canopies: Reduction in temperatures.
- Green façade, covering shelter: No significative differences have been identified.

CH0105| Mean/Max Temp. Decrease

gram
2023

CH0105	TEMPERATURE DECREASE IN MEAN AND PEAK		
Definition	Decrease in mean or peak daytime local temperatures		
NBS	Green shady structures, Green Façade, Green covering shelter, Shade Trees, Cooling trees		
Measured method	Measure air temperature and relative humidity at sampling points at a range of radii from NBS locations both pre- and post-intervention		
Unit	ºC	**Output**	Database

METHODOLOGY:

- Measuring method clearly defined.

GREEN CANOPIES IN SANTA MARÍA ST

EXANTE: Summers 2019, 2020
EXPOST: From February 2021 (Summer 2021)

Vac26- Green Shady structures

Stma1, Stma 4 y Stma6 — NBS (Santa María St)

mc1, mc3, mc4, mc5 y mc6 — Reference (Montero Calvo St)

CH0105 | Mean/Max Temp. Decrease

Peak Temperature and Humidity evolution during summers before and after interventions

DISSEMINATION:

- Visible results.
- Communicable results.

GREEN CANOPIES IN SANTA MARÍA ST

EXANTE: Summers 2019, 2020
EXPOST: Summer 2021

Vac29- Green Shady structures

Annimation (GIF): Exante scenario (2020).

- Differences in temperature in colours.
- Before the NbS intervention.

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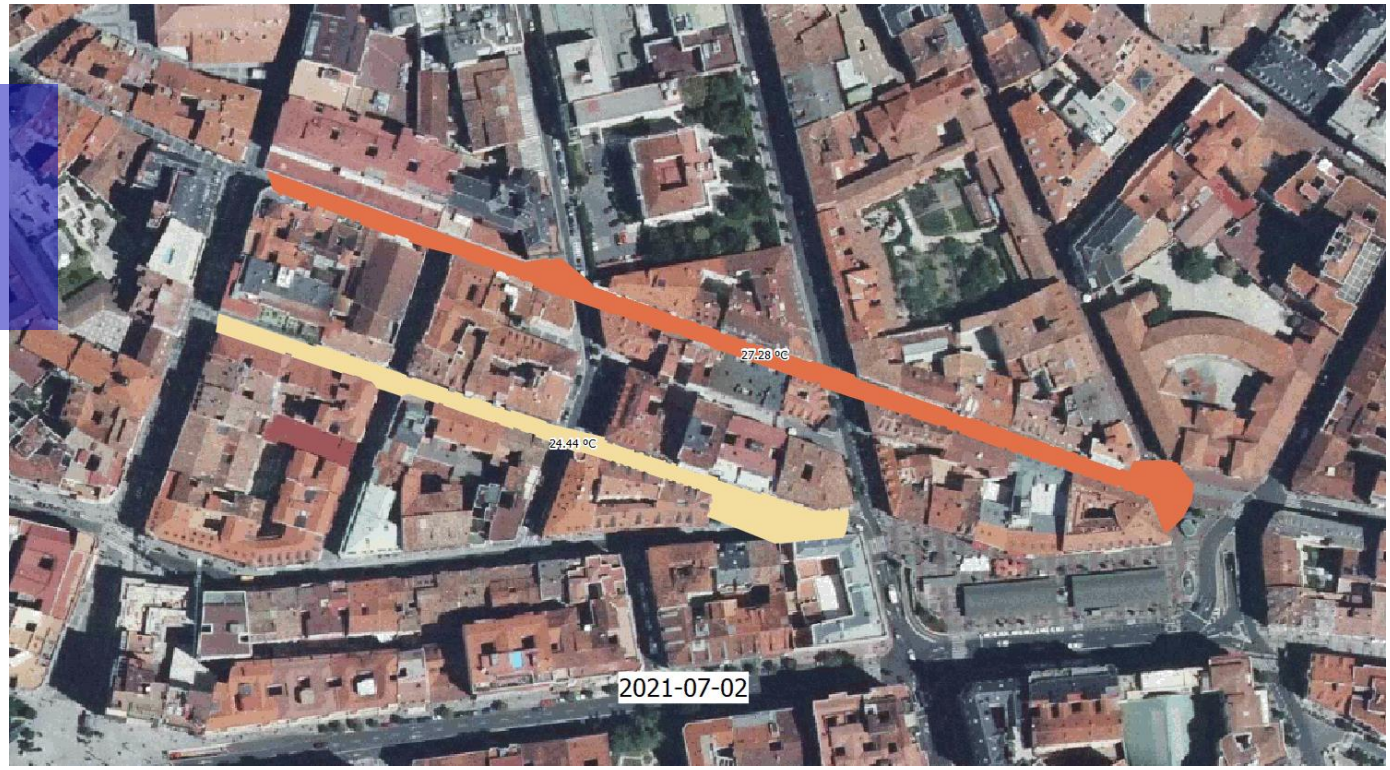
CH0105 | Mean/Max Temp. Decrease

DISSEMINATION:

- Visible results.
- Communicable results.

Peak Temperature and Humidity evolution during summers before and after interventions



GREEN CANOPIES IN SANTA MARÍA ST

EXANTE: Summers 2019, 2020
EXPOST: Summer 2021

Vac29- Green Shady structures

Annimation (GIF): Expost scenario (2021).

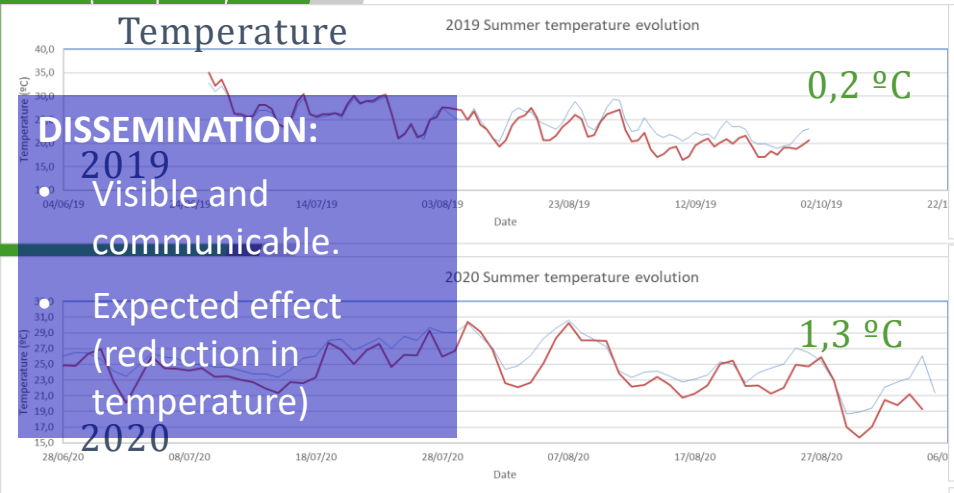
- Differences in temperature in colours.
- After the NbS intervention (*Green canopies*).

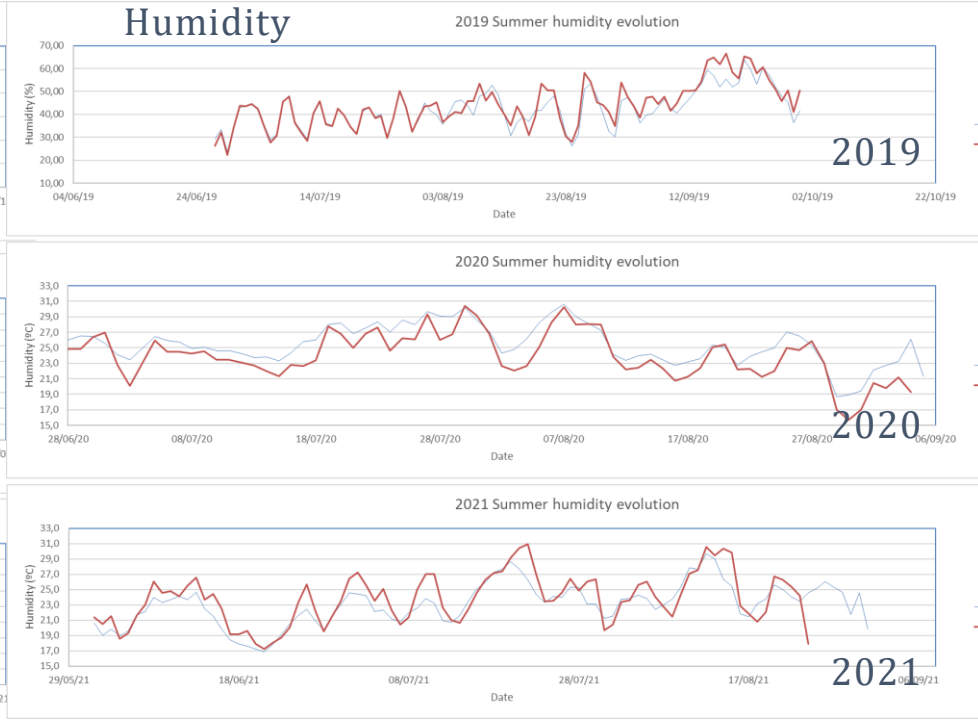
CH0105 | Mean/Max Temp. Decrease

Temperature and humidity evolution during summers before and after interventions

DISSEMINATION:

- Visible and communicable.
- Expected effect (reduction in temperature)





GREEN CANOPIES IN SANTA MARÍA ST

EXANTE: Summers 2019, 2020
EXPOST: Summer 2021

Vac26- Green Shady structures

Results (temperature evolution graphs):

- 2021 shows a reduction in temperature.
- Differences between NbS and Reference St: (2021) Almost -1 °C (2019) and -2 °C (2020)

NBS
Ref.

[TECHNOLOGY CENTRE] CARTIF

CH02-11-12-13| Nutrient abatement

METHODOLOGY:

- Measuring method clearly defined (lab).

DISSEMINATION:

- Technically difficult definition / concepts.

Vac26- ElectroWetland

EW in Patricia Park

CH0211	COD ABATEMENT		
Definition	Organic matter abatement in terms of Chemical Oxygen Demand (COD)		
NBS	Natural Wastewater Treatment Plan; Electro wetland		
Measured method	Comparison of the concentration of the targeted pollutant in the influent and effluent of the system.		
Unit	(mg O2/l) (kg O2/year)	**Output**	Database

CH0212	BOD ABATEMENT		
Definition	Organic matter abatement in terms of Biochemical Oxygen Demand (BOD)		
NBS	Natural Wastewater Treatment Plan; Electro wetland		
Measured method	Comparison of the concentration of the targeted pollutant in the influent and effluent of the system.		
Unit	(mg O2/l) (kg O2/year)	**Output**	Database

CH0213	TOTAL SOLIDS ABATEMENT		
Definition	Total Solids removal (TSS)		
NBS	Natural Wastewater Treatment Plan; Electro wetland		
Measured method	Comparison of the concentration of the targeted pollutant in the influent and effluent of the system.		
Unit	(mg TSS/l) (kg TSS/year)	**Output**	Database

CH02-11-12-13| Nutrient abatement

Electro-wetland: Monitoring

Monitoring: Temperature and humidity sensors. Remote control. Water quality analysis.

Water quality analysis

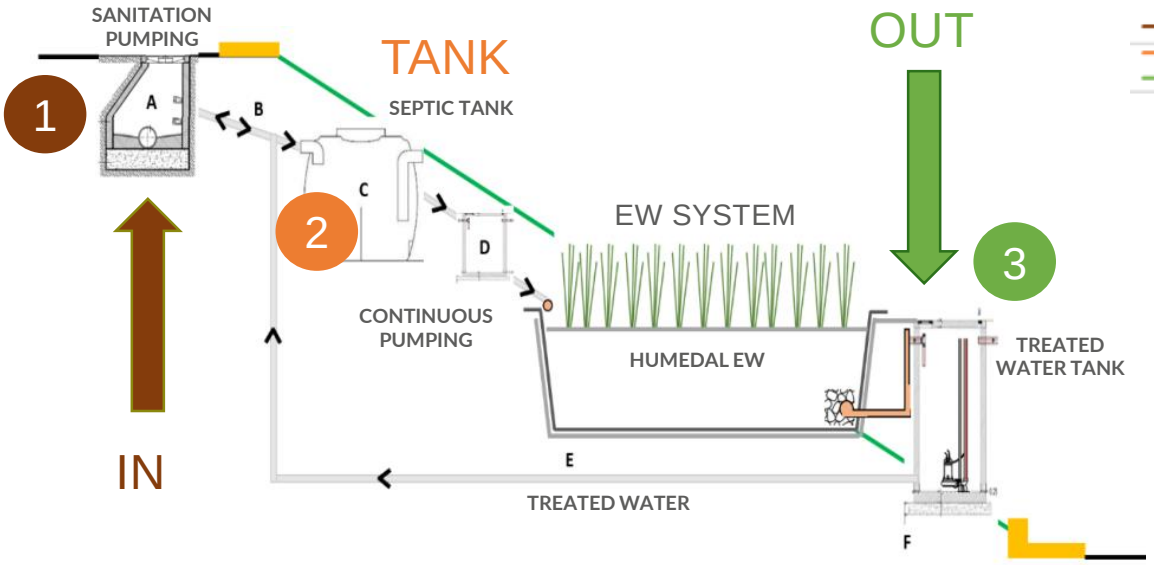
- *Water quality analysis (Aquavall)*
- *Weekly frequency.*
- *Sampling at three points (1-2-3).*
- *Entry and exit of the wetland.*

DISSEMINATION:

- Technically difficult definition / concepts.
- Explain with diagrams and drawings.

Vac26- ElectroWetland

EW in Patricia Park



n Water sampling point

CH02-11-12| Nutrient abatement

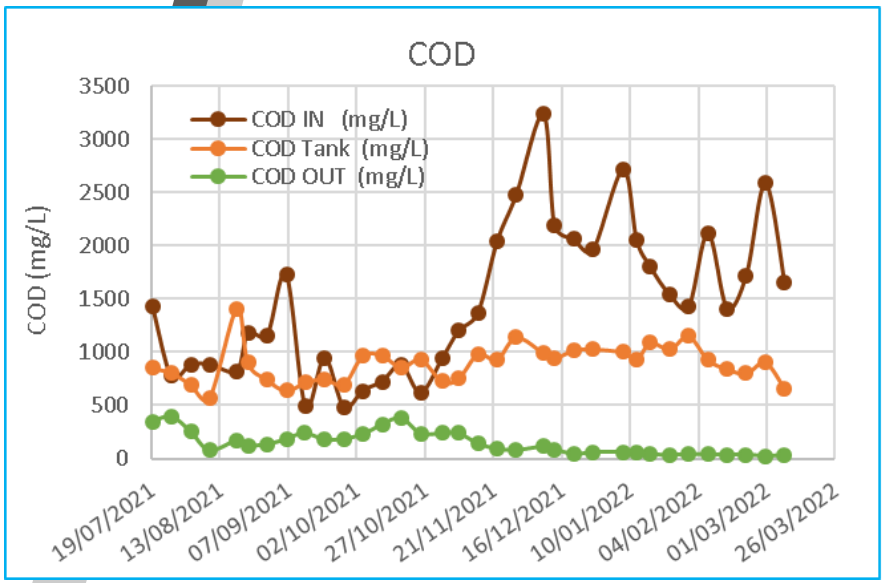
METHODOLOGY:

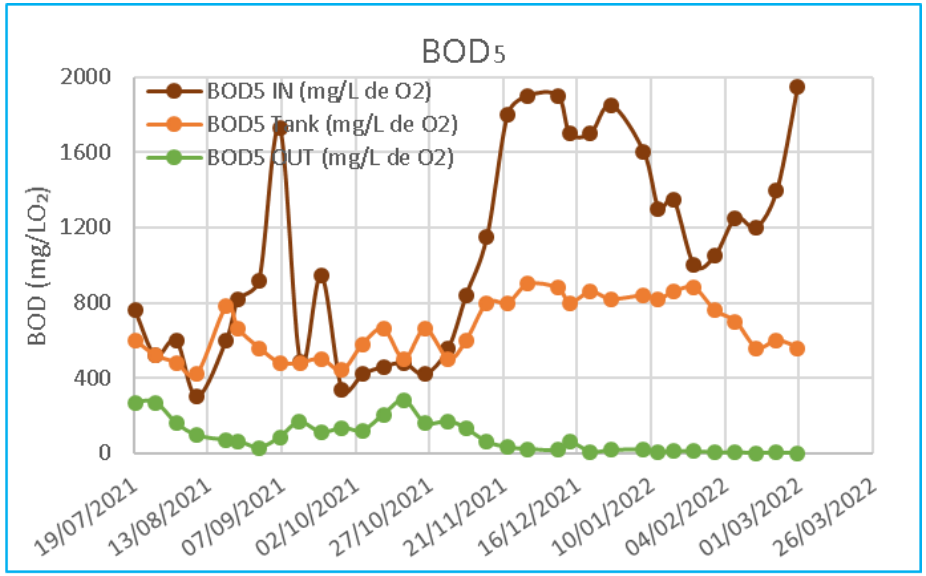
- Measuring method clearly defined (lab)

Parameter	Removal efficiency
COD	85 %
BOD_5	85 %

RESULTS:

- Expected effect (positive wastewater treatment).





- COD & BOD_5 were reduced by **85%**

- Variations in water inlet could be produced by:
  - Industrial spills.
  - Climatic factors.
  - Sampling differences.

UNEXPECTED RESULTS:

- Analyze data and explain anomalies.

CH0413| POLLINATOR SPECIES INCREASE

Beetles

Butterflies

Flies

Bees

CH0413	POLLINATOR SPECIES INCREASE
Definition	Increased habitat for pollinators in NBS GI may contribute to increased abundance of pollinators in the wider urban area.
NBS	**Monitoring of pollinator increase** will be carried out in all NBS which have herbaceous or shrub vegetation, including floral resources.
Measured method	Observation of pollinator visits to NBS within 1x1m quadrats (at sampling locations selected at random) is proposed as a suitable method to obtain representative sampling of the study site. Annual mean abundances and species-richness of pollinators recorded pre-intervention with those recorded post-intervention.
Unit	%
Output	Database

DISSEMINATION:

- Technically friendly definition / concepts.

Pollinators' Checkpoints (33)

NWP

UCS

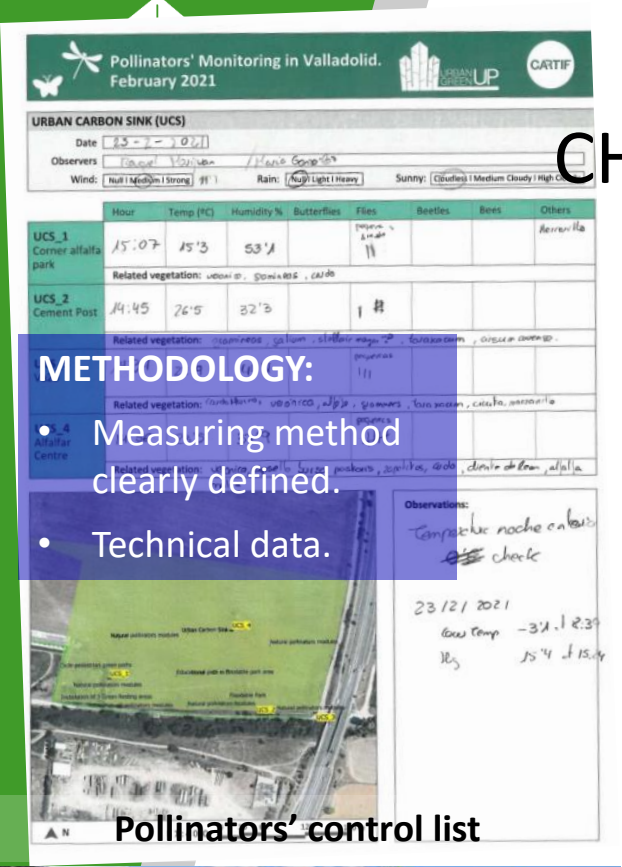
CCR

OPA

Pollinators' Checkpoints (33)

CPointID	CPName	SAMPLENBS	Caption	alternative name caption
UCS_1	Corner alfalfa park	0	crop park border	Calle del Astrofísico Carlos Sánchez Magro
UCS_2	Cement post	0	crop border	Camino Viejo de Renedo
UCS_3	Va20	0	crop border	bypass
UCS_4	Alfalfar Centre	0	crop	Lucerne
NWP_1	Drainage	0	park border	Small bridge
NWP_2	Exercise area	0	Embankment	Rockery
NWP_3	Meadow	0	Between trees	Quiet flat area
NWP_4	Bench	0	trees Shadow	Rest area
NWP_5	Parking	0	Wasteland	dry area
OPA_1	Kids Garden	0	Orchard	kids orchard
OPA_2	Pollinators module	0	Pollinator's Module	aromatic garden
OPA_3	Garden S6	0	Orchard	end orchard
OPA_4	Garden S12 Nati	0	Orchard	Natis orchard
OPA_5	Hut 2 Insect hotel	0	Pollinator's Hotel	cabin
OPA_6	Garden S33	0	Orchard	empty orchard
OPA_7	Garden S50 entrance	0	Orchard	first orchard
CCR_1	Walkway	0	meadow	Cerro de las contiendas
CCR_2	Gardeners cottage	0	meadow	Avenida Salamanca
CCR_3	Moreras meadow	0	meadow	garden lado Nuñez de Arce
CCR_4	Moreras Rosaleda	0	meadow	Garden lado rosaleda
CCR_5	San Benito	1	Vertical mobile garden	steps
CCR_6	Portugalete square	1	Vertical mobile garden	moto parking
CCR_7	Bio filter ladder	0	meadow	ladder parking
CCR_8	Bio filter lift	1	meadow	lift parking
CCR_9	Correos square	1	Vertical mobile garden	asiento verde móvil
CCR_10	Plaza Mayor statue	0	Statue	Conde Ansurez
CCR_11	Plaza Mayor lift	1	Vertical mobile garden	Lift car park
CCR_12	5 Santiago street	0	Planter	Pharmacy
CCR_13	9 Santiago street	0	Miguel Delibes plaque	Santiago Apostol Parish
CCR_14	El Corte Ingles	1	Green Wall	Kiosk Planter
CCR_15	Santa Maria street	0	Green Canopies	Intersection Cluadio Moyano street
CCR_16	Campillo market	1	Green roof	calle Hostieros
CCR_17	Letters Valladolid	1	Vertical mobile garden	Plaza Zorrilla

CH0413| POLLINATOR SPECIES INCREASE


Pollinators' Monitoring in Valladolid.
February 2021

URBAN CARBON SINK (UCS)

Date 23-2-021

Observers

Wind: Null | Medium | Strong

Rain: Null | Light | Heavy

Sunny: Cloudless | Medium Cloudy | High

	Hour	Temp (ºC)	Humidity %	Butterflies	Flies	Beetles	Bees	Others
UCS_1 Corner alfalfa park	15:07	15'3	53'1					
Related vegetation:								
UCS_2 Cement Post	14:45	26'5	32'3		1			
Related vegetation:								
Related vegetation:								
4 Alfalfar Centre								
Related vegetation:								

Observations:

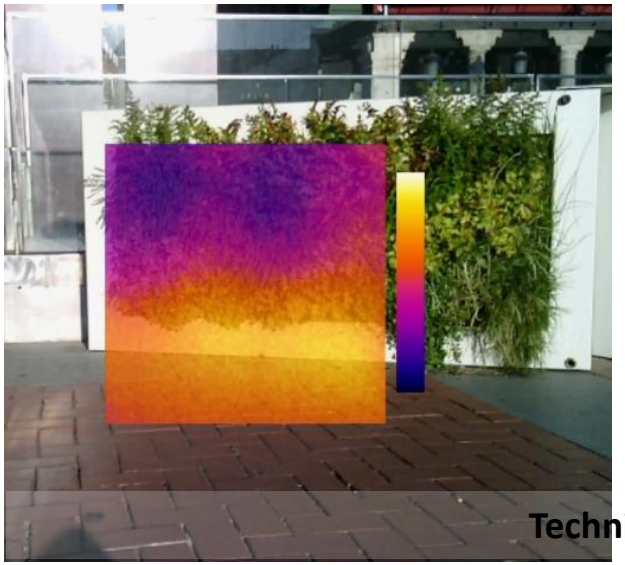
check

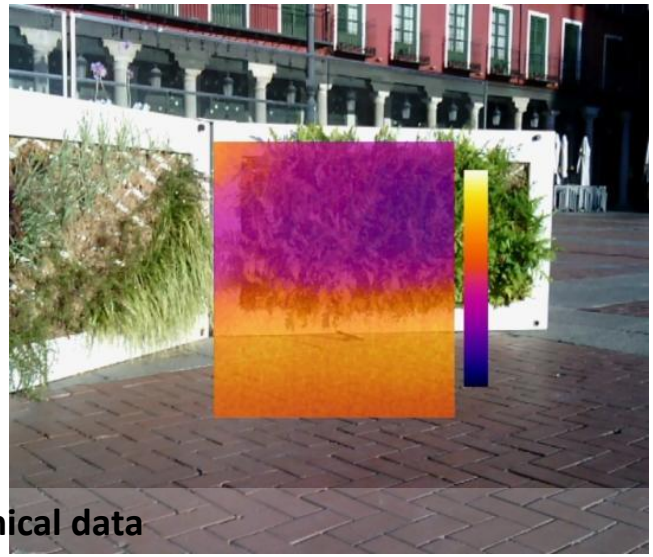
23/2/2021

Pollinators' control list

METHODOLOGY:

- Measuring method clearly defined.
- Technical data.





Technical data

Pollinators' Monitoring in Plaza Mayor, Valladolid 24th of July 2020

Field work

[TECHNOLOGY CENTRE] CARTIF

Humidity and temperature

Equipment

CH0413| POLLINATOR SPECIES INCREASE

BASELINE RESULTS:

Module pollinator Urban Carbon Sink, Natural Wastewater Plant, Orchards Parque Alameda

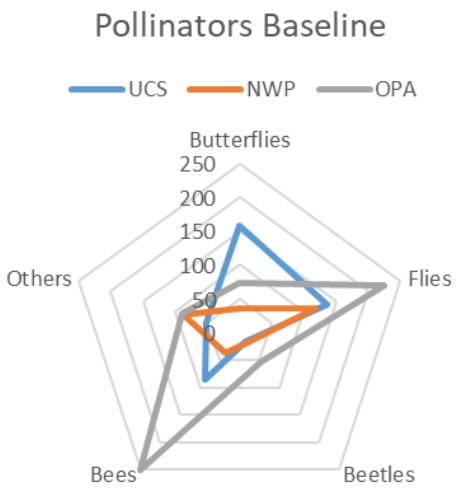
DISSEMINATION:

- Visible results.
- Communicable results.

Urban Carbon Sink

Natural Wastewater Plant

Orchards Parque Alameda

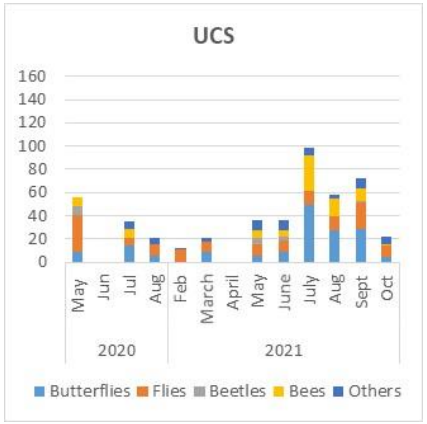


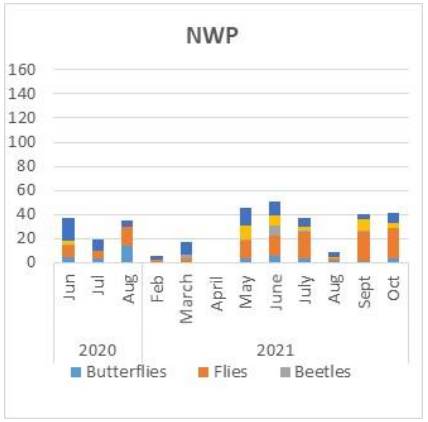
	Total			
	UCS	NWP	OPA	CCR
Butterflies	158	37	73	27
Flies	135	118	224	201
Beetles	16	17	53	15
Bees	86	36	249	176
Total	395	208	599	419
Others	21	18	90	99

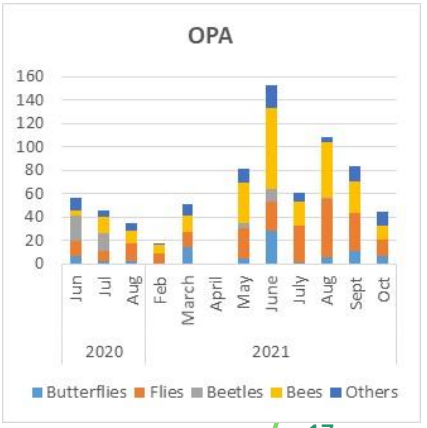
DATA QUALITY:

- Sufficient period of ex-post data collection (large sample:

Pollinators' presence per month:







KPIs Socio-economic data

CH0802 Green intelligence awareness (Educational activities)

CH0703 Citizen perception on NbS

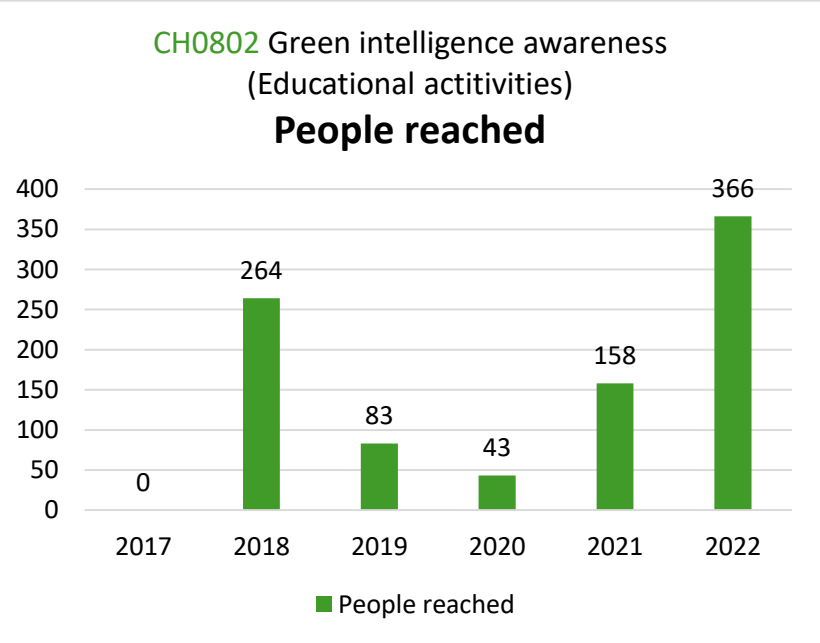
CH0410 Elderly people life quality

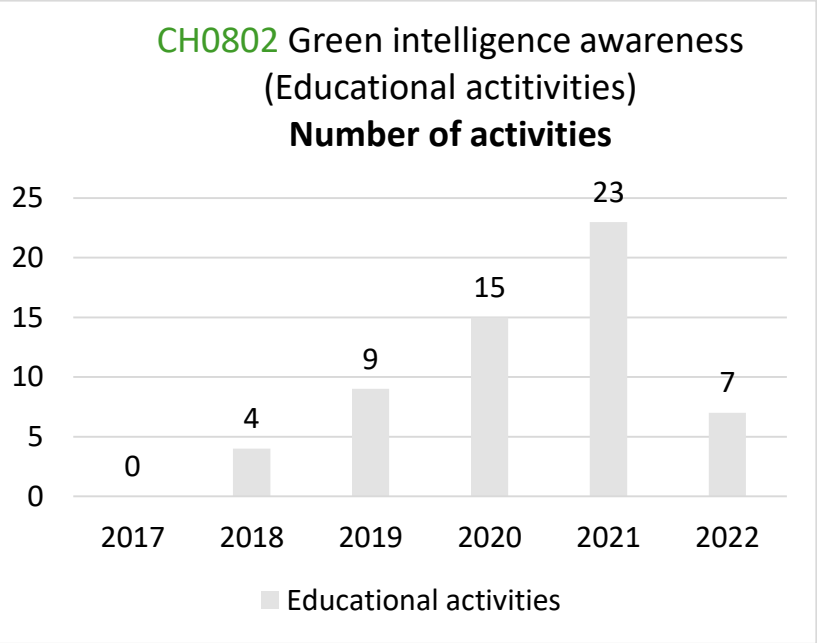
CH0802 Green intelligence awareness (Educational activities)

METHODOLOGY:

- Objectively measurable data.

CH0402	GREEN INTELLIGENCE AWARENESS (EDUCATIONAL ACTIVITIES)		
Definition	Quantify the number of activities, publications or campaigns focused on the enhancement of green intelligence awareness per year, related to a NBS. There are two different categories: Educational activities and Communication activities..		
NBS	*VAc39-Ecological reasoning, VAc41-Support NBS, VAc42-City mentoring*		
Measured method	Category 1: educational activities. Sum of the educational activities per year (nº activities/year) , Number or people that attends to the educational activities (nº attendee/year) (nº attendee/activity/class)		
Unit	People/year	**Output**	Database





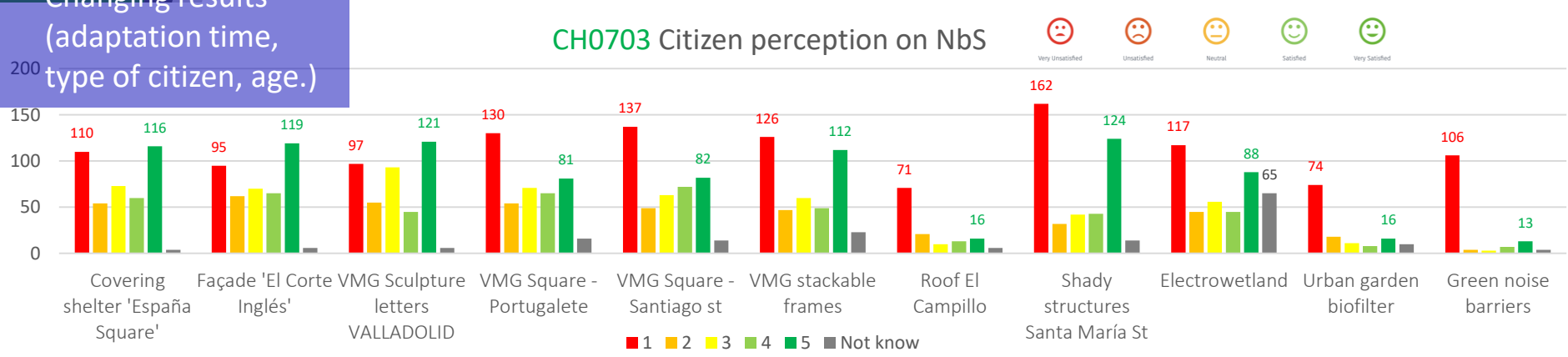
CH0703 Citizen perception on NbS

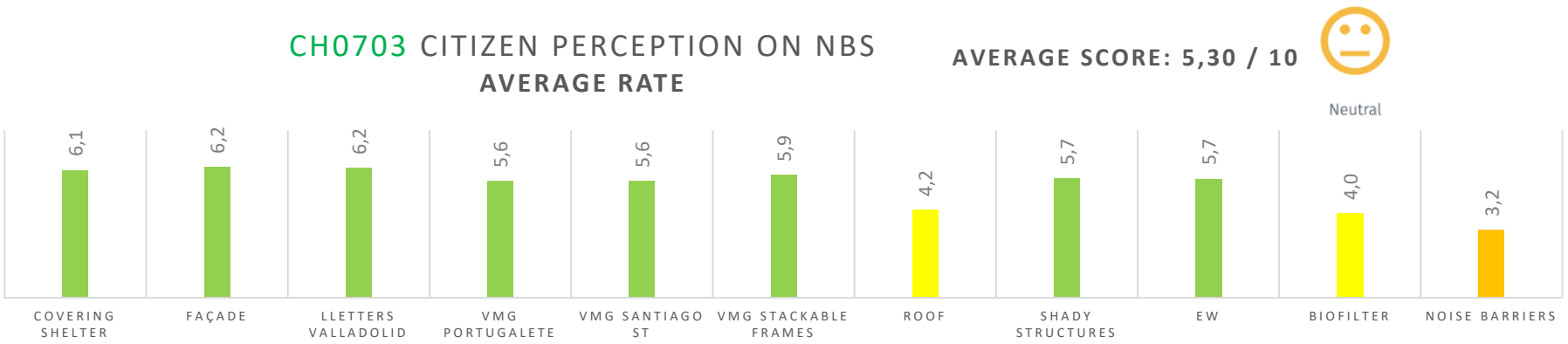
Ayuntamiento de Valladolid

METHODOLOGY:

- Subjectively measurable data (citizen participation survey)
- Changing results (adaptation time, type of citizen, age.)

CH0703	CITIZEN PERCEPTION ON NBS		
Definition	Measures well-being variables such as a) Green space visitors' level of satisfaction. b) Self-reported quality of life (QoL). c) Frequency of green space visitors'		
NBS	*All technical NbS (green corridor, green infrastructure, trees, SUDs)*		
Measured method	Calculated from data captured by surveys and by the URBAN GreenUP mobile application (location data).		
Unit	Likert scale	**Output**	Database, graphs



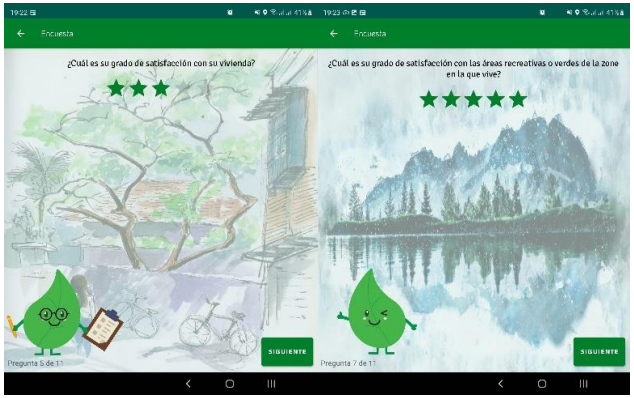


CH0410| Elderly people life quality

CH0410	ELDERLY PEOPLE LIFE QUALITY		
Definition	NBS contribute to improve the quality of life of elderly people both by reducing the pollution and providing new spaces for social interaction and recreational/physical activity development.		
NBS	Green cycle lane; Tree related actions; Vertical and horizontal GI; Green resting areas; Cycle-pedestrian green paths; Urban carbon sink		
Measured method	Calculated from statistical data obtained from surveys to the population (over 60 in age)		
Unit	Likert scale (1-5)	**Output**	Database

METHODOLOGY:

- Objectively measurable data.
- Automatic data.
- Applied new technologies.
- Few users = little data.



- Based on the EBP (Personal Welfare Survey) developed by Eustat (Basque Country Statistics Institute)
- Anonymous survey to all application users over 60 in age.
- Divided in 4 areas, which are averaged to generate the final value:
  - Personal satisfaction.
  - Trust in public bodies.
  - Personal support.
  - State of mind.
- Very small sample at this stage (low number of application users among the elderly people)

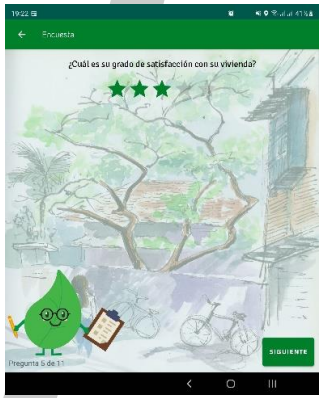
CH0410| Elderly people life quality

CH0410	ELDERLY PEOPLE LIFE QUALITY		
Definition	NBS contribute to improve the quality of life of elderly people both by reducing the pollution and providing new spaces for social interaction and recreational/physical activity development.		
NBS	Green cycle lane; Tree related actions; Vertical and horizontal GI; Green resting areas; Cycle-pedestrian green paths; Urban carbon sink		
Measured method	Calculated from statistical data obtained from surveys to the population (over 60 in age)		
Unit	Likert scale (1-5)	**Output**	Database

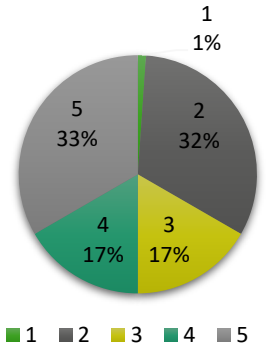
METHODOLOGY:

- Objectively measurable data.
- Automatic data.
- Applied new technologies.
- Few users = little data.

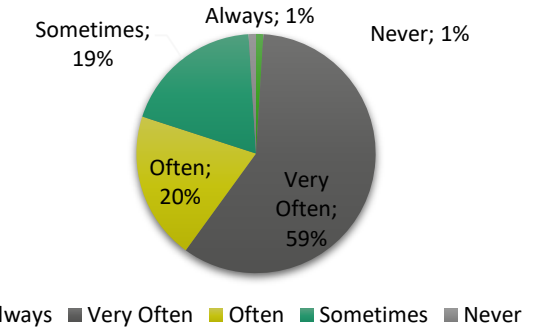
GET IT ON Google Play



What is your degree of satisfaction with green or recreational spaces in the area where you live?



In the last four weeks how often did you feel happy?



- Based on the EBP (Personal Welfare Survey) developed by Eustat (Basque country statistics institute)
- Anonymous survey to all application users over 60 in age.
- Divided in 4 areas, which are averaged to generate the final value:
  - Personal satisfaction.
  - Trust in public bodies.
  - Personal support.
  - State of mind.
- Very small sample at this stage (low number of application users among the elderly people)

KPIs Modelling data

CH0406| GI connectivity

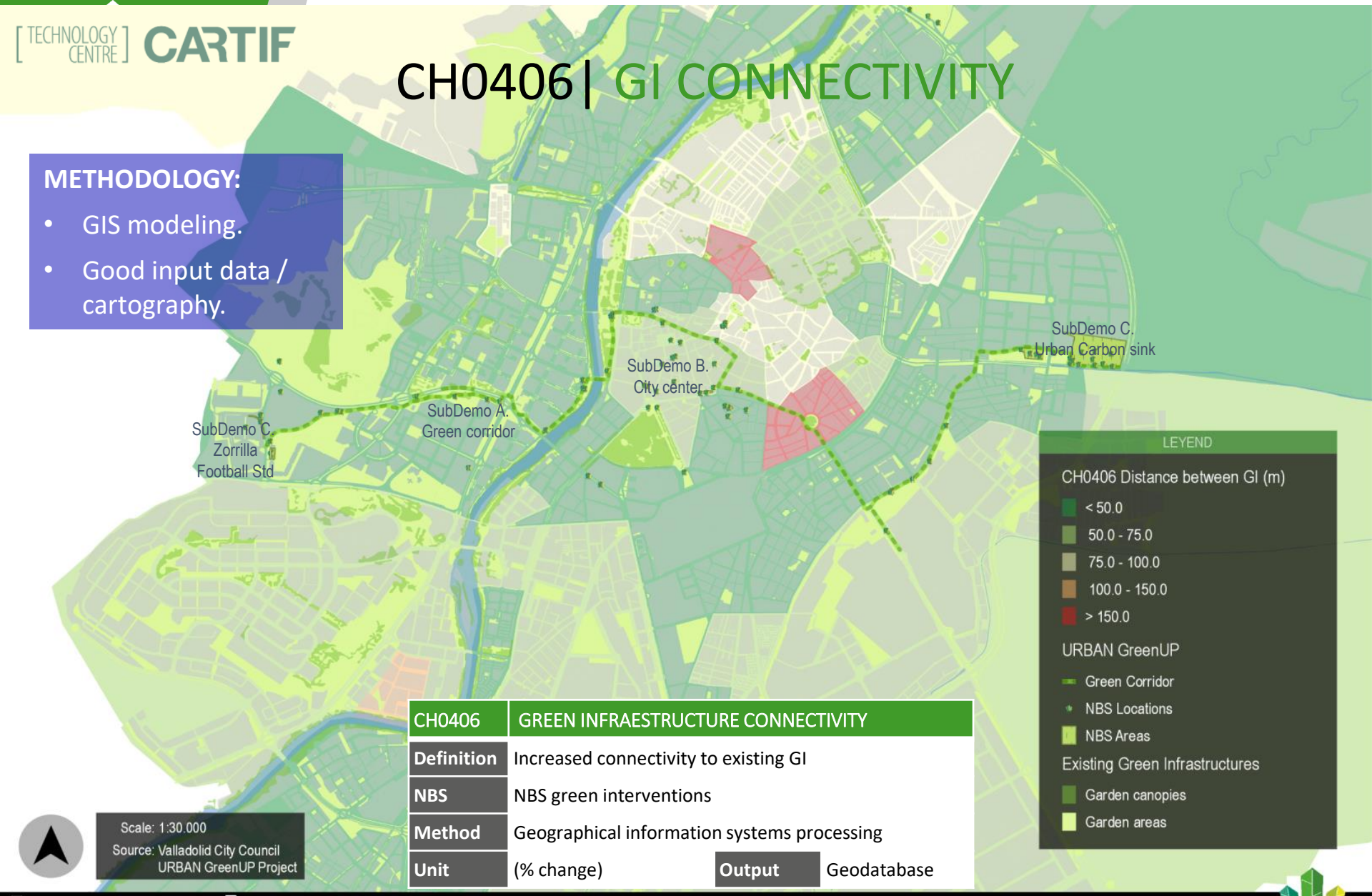
VAc2-3-4-5-7 | Trees density

CH0901| Noise reduction

CH0406| GI CONNECTIVITY

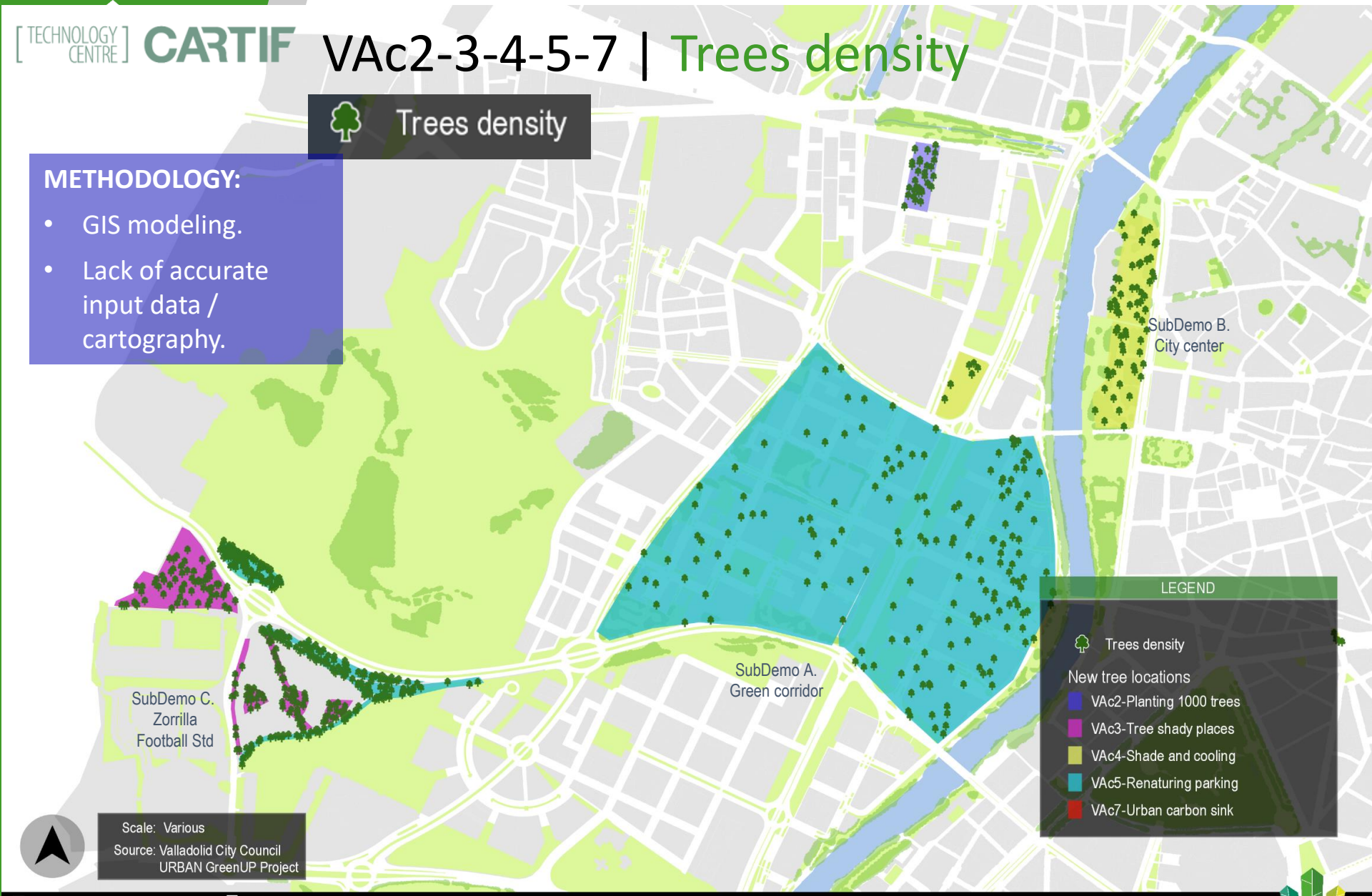
METHODOLOGY:

- GIS modeling.
- Good input data / cartography.



CH0406	GREEN INFRAESTRUCTURE CONNECTIVITY		
Definition	Increased connectivity to existing GI		
NBS	NBS green interventions		
Method	Geographical information systems processing		
Unit	(% change)	**Output**	Geodatabase

VAc2-3-4-5-7 | Trees density



front runner city
VALLADOLID

BASELINE
POST-INTERVENTION

Action
New tree locations

CH0901| Noise reduction

CH0901	NOISE REDUCTION		
Definition	Reduction in the levels of noise in Hospital Militar parade.		
NBS	VAc22-VAc23 Green noise barriers		
Measured method	Direct measurements with sonometer: Noise reduction (dB) in the intervention zone compared with reference zone.		
Unit	dB(LA eq)	**Output**	Table, charts, map

[TECHNOLOGY CENTRE] CARTIF

- ✓ **BASELINE (2020, 2021)**
- ✓ **POST-INTERVENTION (Feb 22)**

EQUIPMENT:

- Real measurements with simple equipment: thermometer.

METHODOLOGY:

- Several measuring points.
- Comparison with benchmarks..

GREEN NOISE BARRIERS

EXANTE: 2020, 2021

Reduction of noise levels

Noise Baseline (dB). NBS site and reference site.												
	08/10/2020		16/10/2020		03/03/2021		07/05/2021		24/08/2021		Average	
	Max.	Av.	Max.	Av.	Max.	Av.	Max.	Av.	Max.	Av.	Max.	Av.
Paseo del Hospital Militar, 34 (Ref.)	100,1	76,2	106,8	74,4	102,4	75,1	99,3	67,4	96	59,1	100,92	70,44
Paseo del Hospital Militar, 31 (NBS)	97,9	68,8	96,3	71,9	98,3	69,6	99,8	62	102,4	60,1	98,94	66,48
Difference	2,2	7,4	10,5	2,5	4,1	5,5	-0,5	5,4	-6,4	-1	1,98	3,96

- [CAR] Baseline (2020, 2021).
- Periodic sound measurements in the intervention (NbS) and Reference areas.
- Both areas have similar noise levels (motorized traffic)
- An average value has been calculated for each location, both for maximum and average (LAeq) levels.

CH0901| Noise reduction

CH0901	NOISE REDUCTION		
Definition	Reduction in the levels of noise in Hospital Militar parade.		
NBS	VAc22-VAc23 Green noise barriers		
Measured method	Direct measurements with sonometer: Noise reduction (dB) in the intervention zone compared with reference zone.		
Unit	dB(LA eq)	**Output**	Table, charts, map

TECHNOLOGY CENTRE CARTIF

- ✓ **BASELINE (2020, 2021)**
- ✓ **POST-INTERVENTION (Feb 22)**

GREEN NOISE BARRIERS

METHODOLOGY:

- Noise modeling program.

RESULTS:

- Expected results (reduction of noise).
- Specific noise measurements.

EXPOST: Feb 2022

Reduction of noise levels

NBS Assessment. NBS site and reference site.	13/01/2022		18/03/2022		10/05/2022	
	Max.	**Av.**	**Max.**	**Av.**	**Max.**	**Av.**
Paseo del Hospital Militar, 34 (Ref.)	99,7	62,1	102	68,6	101	69,9
Paseo del Hospital Militar, 31 (NBS)	91,9	57,8	100,8	69,6	101,7	68,4
Difference	7,8	4,3	1,2	-1	-0,7	1,5

- [CAR] Expost: barriers installed - before planting (Jan 2022)
- Some noise reductions are observed (further measurements in Spring)

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THANK YOU
FOR YOUR ATTENTION

VALLADOLID CITY COUNCIL

ALICIA VILLAZÁN
avillazan@ava.es