Interreg North-West Europe

Co-funded by the European Union

NWE0500898

RAINBOW

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A - Project identification

A.1 Project identification

Project id (automatically created)	NWE0500898
Name of the lead partner organisation	Landeshauptstadt Stuttgart
Name of the lead partner organisation in English	State Capital of Stuttgart
Project title	Improve climate resilience in cities by restoring water cycles
Project acronym	RAINBOW
Programme priority	Smart climate and environmental resilience for NWE territories
Specific objective	2.4: Promoting climate change adaptation and disaster risk prevention and resilience, taking into account ecosystem-based approaches
Project duration in months	42
Total budget	5.400.000,00
Total ERDF budget	3.240.000,00
% of total budget for investments	20,00%

A.2 Project summary

Please give a short overview of the project and describe:

- the common challenge of the programme area you are jointly tackling in your project;
- the overall objective of the project and the expected change your project will make to the current situation;
- the main outputs you will produce and those who will benefit from them;
- the approach you plan to take and why a transnational approach is needed;
- what is new/original about the project.

Many urban and peri-urban areas in NWE face frequent flooding events alternated by droughts and shortage of fresh water. Rising influence of climate change (CC) will increase these risks. The interaction between natural like groundwater and artificial water bodies, like it has worked for decades, is disturbed. As a result, cities are encountering significant water management challenges, related a.o. to water quality, availability, or groundwater-related land subsidence. Our goal is to address these challenges and enhance cities' resilience against CC by improving their capacities for soil and groundwater resource management. This empowers public authorities to enhance the sponge function of the subsoil and restore shallow groundwater bodies.
Bringing together both scientific, technical and administrative expertise, we will develop a 'Roadmap for Sponge Cities', providing guidance for municipalities in their transformation towards sponge cities. The roadmap will be implemented through at least four action plans tailored to the settings of the involved partner cities in Germany, Belgium, Netherlands and France. Pilot actions in these four cities - whose specific contexts and issues are both complementary and prototypical for municipalities across NWE -, will provide the basis to develop a toolbox (solution) containing tools and measures applicable to cities across NWE, helping them tackle technical and analytical issues, implementation barriers as well as stakeholder involvement. Targeted trainings for sponge city stakeholders will raise awareness and improve skills among staff in environmental and spatial planning departments and related service providers, to support the introduction of resilient water management and restore effective urban water cycles in cities across NWE.

In French language [2000 characters]

Plusieurs zones urbaines et périurbaines de l'Europe du Nord-Ouest (ENO) sont soumises à des évènements extrêmes (inondations, sécheresses) et à une diminution des ressources en eau. L'influence croissante du changement climatique (CC) augmentera ces risques. Les relations entre grand et petit cycles de l’eau, existant depuis des décennies, sont ou seront perturbées. Les villes sont ainsi confrontées à la nécessité de modifier leurs pratiques de gestion quantitative et qualitative de la ressource ainsi qu’à des problèmes d’affaissements des sols associés.
Notre objectif est de relever ces défis et de renforcer la résilience des villes aux CC en améliorant leurs capacités de gestion des ressources en sols et en eaux. Cette autonomisation des acteurs territoriaux vise à améliorer la gestion des eaux en contexte urbain et de restaurer l’état des aquifères superficiels. Mobilisant des compétences scientifiques techniques et administratives au sein d’une collaboration, nous élaborerons une feuille de route aiguillant les municipalités dans leur transformation en « Villes Eponges ».
Cette feuille de route se déclinera en au moins quatre plans d'action sur mesure pour les villes partenaires en Allemagne, en Belgique, aux Pays-Bas et en France.
Grâce à celles-ci - dont les contextes et les problématiques sont à la fois complémentaires et prototypiques des municipalités de l'ENO-, nous développerons une boîte à outils regroupant des

outils et un panel de recommandations, permettant à ces futurs acteurs de résoudre leurs problèmes techniques et de conception ainsi que ceux liés à l'appropriation par les urbanistes et les conflits d' usage.
Nos actions de formation permettront une montée en compétence des agents en charge de l'environnement et de l'aménagement et des consultants pour favoriser les bonnes pratiques permettant l'apparition d'une gestion résiliente de la ressource et la restauration des cycles de l'eau en contexte urbain à travers l'ENO.

In German language [2000 characters]

Viele städtische und peri-urbane Gebiete in NWE leiden unter häufigen Überschwemmungen im Wechsel mit Trockenperioden und Wassermangel. Der zunehmende Einfluss des Klimawandels (CC) verstärkt diese Risiken. Daher stehen Städte vor erheblichen wasserwirtschaftlichen Herausforderungen, einschließlich Wasserqualität, Verfügbarkeit und grundwasserbedingter Bodensenkungen.
Unser Ziel ist es, diese Probleme zu überwinden und die Auswirkungen des Klimawandels abzumildern, indem wir die Fähigkeit der Städte zur Bewältigung der Folgen des Klimawandels im Bereich des städtischen Boden- und Grundwassermanagements verbessern. Öffentliche Akteure werden befähigt, die Schwammfunktion des Untergrunds zu stärken und die Funktion flacher Grundwasserkörper zu sichern. Durch Bündelung wissenschaftlich-technischer, raumplanerischer und verwaltungsrechtlicher Kompetenzen entwickeln wir eine „Schwammstadt-Roadmap", die den Kommunen bei ihrer Umstellung auf Schwammstädte als Leitfaden dient.
Der Fahrplan wird durch mindestens vier Aktionspläne umgesetzt, die auf die Gegebenheiten der beteiligten Partnerstädte in Deutschland, Belgien, den Niederlanden und Frankreich zugeschnitten sind.
Durch Pilotaktionen in diesen vier Städten - deren spezifische Problemlagen sowohl beispielhaft als auch komplementär zu den Herausforderungen von Kommunen in ganz NWE sind - werden wir eine Toolbox (Lösung) mit Instrumenten und Maßnahmen entwickeln, die für Städte in ganz NWE anwendbar ist und ihnen helfen wird, technische Herausforderungen, Umsetzungsbarrieren sowie die Einbeziehung von Interessengruppen zu bewältigen.
Mit gezielten Schulungen sensibilisieren und qualifizieren wir Mitarbeiter in Umwelt- und Planungsabteilungen sowie deren Dienstleister für ein resilientes Wassermanagement und erhöhen so die Bereitschaft von Städten, Maßnahmen zur Wiederherstellung intakter Wasserkreisläufe umzusetzen.

In Dutch language [2000 characters]

Veel stedelijke en semi-stedelijke gebieden in Noordwest-Europa (NWE) worden geconfronteerd met regelmatige overstromingen, afgewisseld met droogte en een tekort aan zoet water. De toenemende invloed van klimaatverandering vergroot deze risico's. De interactie tussen natuurlijke en kunstmatige waterlichamen, zoals deze decennialang functioneerde, is verstoord. Hierdoor kampen steden met grote uitdagingen op het gebied van waterbeheer, zoals waterkwaliteit, beschikbaarheid en bodemdalingen door grondwateronttrekking.

Ons doel is deze uitdagingen aan te pakken en steden weerbaarder te maken tegen klimaatverandering door hun capaciteit voor bodem- en grondwaterbeheer te verbeteren. Dit stelt overheden in staat om de sponsfunctie van de ondergrond te versterken en ondiepe grondwaterlichamen te herstellen. Met een combinatie van wetenschappelijke, technische en administratieve expertise ontwikkelen we een 'Roadmap voor Sponssteden'. Deze gids helpt gemeenten bij hun transformatie naar sponssteden.
De roadmap wordt geïmplementeerd via minstens vier actieplannen, aangepast aan de specifieke

situaties van partnersteden in Duitsland, België, Nederland en Frankrijk. Door middel van pilots in deze vier steden - die complementaire en representatieve uitdagingen bieden voor andere gemeenten in NWE - ontwikkelen we een toolbox met oplossingen. Deze toolbox bevat toepasbare maatregelen en hulpmiddelen voor steden in NWE om technische en analytische uitdagingen, implementatiebarrières en betrokkenheid van belanghebbenden aan te pakken.

Met gerichte trainingen vergroten we het bewustzijn en verbeteren we de vaardigheden van medewerkers in milieu- en ruimtelijke ordeningsafdelingen en aanverwante dienstverleners. Dit ondersteunt de invoering van veerkrachtig waterbeheer en het herstel van effectieve stedelijke watercycli in steden door heel NWE.

A.3 Project budget overview

Programme funding			Contribution					Total project budget
Funding source	Funding amount	Co-financing rate (%)	Automatic public contribution	Other public contribution	Total public contribution	Private contribution	Total contribution	
ERDF	0,00	0,00%	0,00	0,00	0,00	0,00	0,00	0,00
Total EU funds	0,00	0,00%	0,00	0,00	0,00	0,00	0,00	0,00
Total project budget	0,00	0,00%	0,00	0,00	0,00	0,00	0,00	0,00

A.4 Project outputs and result overview

Programme Output Indicator	Aggregated value per Programme output indicator	Measurement Unit	Output	Output Title	Output target value	Programme result indicator	Baseline	Result indicator target value	Measurement unit
Participations in joint training schemes	1,00	participations	Output 3.1	Training of expert community from regional to transnational level by a modular 4 days training scheme in the partner regions	1,00	Completion of joint training schemes	0,00	35,00	participants
Jointly developed solutions	1,00	solutions	Output 2.2	Toolbox for enabling Sponge Cities	1,00	Solutions taken up or up-scaled by organisations	0,00	1,00	solutions
Pilot actions developed jointly and implemented in projects	4,00	pilot actions	Output 2.1	Pilot actions in 4 cities	4,00				

Programme Output Indicator	Aggregated value per Programme output indicator	Measurement Unit	Output	Output Title	Output target value	Programme result indicator	Baseline	Result indicator target value	Measurement unit
Strategies and action plans jointly developed	2,00	strategy /action plan	Output 1.1	Sponge City Strategy	1,00	Joint strategies and action plans taken up by organisations	0,00	5,00	joint strategy /action plan
			Output 1.2	SC Action Plan implemented in 4 cities	1,00				
						Organisations with increased institutional capacity due to their participation in cooperation activities across borders	0,00	40,00	Organisation

B - Project partners

Partners overview

Number	Status	Name of the organisation in english	Country (click in cell to access drop-down list)	Organisation abbreviation	Partner role	Associated organisations	Partner total eligible budget
1	Active	State Capital of Stuttgart	Deutschland (DE)	LHS	LP		0,00
2	Active	University of Stuttgart	Deutschland (DE)	USTUTT	PP		0,00
3	Active	TU Dortmund University	Deutschland (DE)	TUDO	PP		0,00
4	Active	French Geological Survey	France (FR)	BRGM	PP		0,00
5	Active	Urban community of Lens Lievin	France (FR)	CALL	PP		0,00
6	Active	City of Brussels	Belgique/België (BE)	VBX	PP		0,00
7	Active	Coordination Senne	Belgique/België (BE)	CZ-CS	PP		0,00
8	Active	Free University of Brussels	Belgique/België (BE)	ULB	PP		0,00
9	Active	Municipality of Zwolle	Nederland (NL)	Zwolle	PP		0,00
10	Active	Deltares	Nederland (NL)	Deltares	PP		0,00

B.1 Lead partner	
Partner number	1
Partner role	LP
Name of the organisation in original language	Landeshauptstadt Stuttgart
Name of the organisation in english	State Capital of Stuttgart
Organisation abbreviation	LHS
Department / unit / division	Amt für Umweltschutz (Department for Environmental Protection)
Partner main address	
Country (click in cell to access drop-down list)	Deutschland (DE)
NUTS 2 (click in cell to access drop-down list once the Country is selected)	Stuttgart (DE11)
NUTS 3 (click in cell to access drop-down list once the NUTS 2 is selected)	Stuttgart, Stadtkreis (DE111)
Street, House number, Postal code, City	Gaisburgstraße 4 70182 Stuttgart
Homepage	www.stuttgart.de
Address of department / unit / division (if applicable)	
Country (click in cell to access drop-down list)	
NUTS 2 (click in cell to access drop-down list once the Country is selected)	
NUTS 3 (click in cell to access drop-down list once the NUTS 2 is selected)	
Street, House number, Postal code, City	
Legal and financial information	
Type of partner	Local public authority
Partner size	
The organisation applies for an advance	NO
Legal status	Public
Sector of activity at NACE group level	

Legal and financial information	
VAT number (if applicable)	
Is your organisation entitled to recover VAT based on national legislation for the activities implemented in the project?	
Other identifier number	
Other identifier description	
PIC (from EC Participant Register)	

Contact	
Legal representative	Mr Peter Pätzold
Contact person	Dr. Kristina Schenk
Email	kristina.schenk@stuttgart.de
Telephone no.	

Motivation

Which of the organisation's thematic competences and experiences are relevant for the project?

LHS acts as competent authority for water, soil, nature conservation, energy and climate. It has a huge responsibility for the second largest mineral water resource in Europe.
Stuttgart also pursues the development of inner-city brownfield sites, where soil contamination is an obstacle in water management.
Stuttgart is therefore interested in recognizing the effects of infiltration on groundwater quality as a key issue in sponge city concepts. LHS strives to improve resilience to CC and to influence the landowners to apply adapted measures. LHS has wide experience in EU-funded and specifically Interreg projects since 2005, participating as lead partner as well as project partner.

What is the role (contribution and main activities) of your organisation in the project?

Due to its extensive experience, LHS will be LP. Supported by the transnational exchange of know-how in this interdisciplinary international partnership, pilot "Stuttgart Rosenstein" will be implemented as an urban development project under the aspects of sponge city concepts, addressing subsoil contamination in former industrial areas and its effect on groundwater resources. This will lead us to define indicators for future urban development and handling of pollution as an input for the transnational partners' activities and the joint work on the Roadmap and Toolbox. Training Activities by USTUTT will be supported.

Co-financing

Source	Amount	Percentage

Co-financing			
Source		Amount	Percentage
Partner total eligible budget		0,00	100,00%
Origin of partner contribution			
Source of contribution	Legal status of contribution	Amount	% of total partner budget
Total			
Sub-total public contribution		0,00	0,00%
Sub-total automatic public contribution		0,00	0,00%
Sub-total private contribution		0,00	0,00%
Total		0,00	0,00%

State Aid	
State aid criteria self-check	
Criterium I: Is the partner involved in economic activities through the project?	
1. Will the project applicant implement activities and/or offer goods/services for which a market exists?	
2. Are there activities/goods/services that could have been undertaken by an operator with the view to making profit (even if this is not the applicant's intention)?	
Criterium II: Does the partner receive an undue advantage in the framework of the project?	
1. Does the project applicant plan to carry out the economic activities on its own i.e. not to select an external service provider via public procurement procedures for example?	
2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?	
Result of State aid criteria self-check:	To see the result, please answer all the questions above.

State aid relevant activities	
GBER scheme / de minimis	

B.1 Project Partner 2	
Partner number	2
Partner role	PP
Name of the organisation in original language	Universität Stuttgart
Name of the organisation in english	University of Stuttgart
Organisation abbreviation	USTUTT
Department / unit / division	Research Facility for Subsurface Remediation (VEGAS)
Partner main address	
Country (click in cell to access drop-down list)	Deutschland (DE)
NUTS 2 (click in cell to access drop-down list once the Country is selected)	Stuttgart (DE11)
NUTS 3 (click in cell to access drop-down list once the NUTS 2 is selected)	Stuttgart, Stadtkreis (DE111)
Street, House number, Postal code, City	Keplerstraße 7 70174 Stuttgart
Homepage	https://www.vegas.uni-stuttgart.de/
Address of department / unit / division (if applicable)	
Country (click in cell to access drop-down list)	
NUTS 2 (click in cell to access drop-down list once the Country is selected)	
NUTS 3 (click in cell to access drop-down list once the NUTS 2 is selected)	
Street, House number, Postal code, City	
Legal and financial information	
Type of partner	Higher education and research organisations
Partner size	
The organisation applies for an advance	NO
Legal status	Public
Sector of activity at NACE group level	

Legal and financial information	
VAT number (if applicable)	
Is your organisation entitled to recover VAT based on national legislation for the activities implemented in the project?	
Other identifier number	
Other identifier description	
PIC (from EC Participant Register)	

Contact	
Legal representative	Chancelor Anna Steiger
Contact person	PD Dr.-Ing. Claus Haslauer
Email	claus.haslauer@iws.uni-stuttgart.de
Telephone no.	

Motivation

Which of the organisation's thematic competences and experiences are relevant for the project?

VEGAS develops groundwater management and protection strategies, monitoring technologies and site investigation techniques. Experiments are conducted from the lab scale to the technical scale using large containers and field tests, enabling
- controlled experiments related to infiltration in the unsaturated zone, groundwater flow and coupled solute/contaminant transport to gain process understanding
- mathematical modelling to transfer quantitatively processes to other sites and longer timeframes

What is the role (contribution and main activities) of your organisation in the project?

-perform controlled experiments in our research facility to understand the dynamic behaviour of pollutants in the subsurface under climate change conditions. Results and mathematical models are supporting the other partners (LHS, VBX, CALL, Zwolle) towards the decision-support tool.
-collaboration with LHS at the pilot Rosensteinquartier. Based on improved understanding of the brownfield site, we develop a water-management strategy for precipitation of water (extremes) considering site contamination
- the regional Training Association for soil and contaminated sites BW is operated by the USTUTT and shall offer public trainings for project partners, local and regional stakeholders as well as planners and service providers.

Co-financing

Source	Amount	Percentage

Co-financing			
Source		Amount	Percentage
Partner total eligible budget		0,00	100,00%
Origin of partner contribution			
Source of contribution	Legal status of contribution	Amount	% of total partner budget
Total			
Sub-total public contribution		0,00	0,00%
Sub-total automatic public contribution		0,00	0,00%
Sub-total private contribution		0,00	0,00%
Total		0,00	0,00%

State Aid	
State aid criteria self-check	
Criterium I: Is the partner involved in economic activities through the project?	
1. Will the project applicant implement activities and/or offer goods/services for which a market exists?	
2. Are there activities/goods/services that could have been undertaken by an operator with the view to making profit (even if this is not the applicant's intention)?	
Criterium II: Does the partner receive an undue advantage in the framework of the project?	
1. Does the project applicant plan to carry out the economic activities on its own i.e. not to select an external service provider via public procurement procedures for example?	
2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?	
Result of State aid criteria self-check:	To see the result, please answer all the questions above.

State aid relevant activities	
GBER scheme / de minimis	

B.1 Project Partner 3	
Partner number	3
Partner role	PP
Name of the organisation in original language	Technische Universität Dortmund
Name of the organisation in english	TU Dortmund University
Organisation abbreviation	TUDO
Department / unit / division	Faculty of Spatial Planning; Research Group on Land policy, land management, and municipal surveying
Partner main address	
Country (click in cell to access drop-down list)	Deutschland (DE)
NUTS 2 (click in cell to access drop-down list once the Country is selected)	Arnsberg (DEA5)
NUTS 3 (click in cell to access drop-down list once the NUTS 2 is selected)	Dortmund, Kreisfreie Stadt (DEA52)
Street, House number, Postal code, City	August-Schmidtstr. 10 44227 Dortmund
Homepage	https://bbv.raumplanung.tu-dortmund.de/
Address of department / unit / division (if applicable)	
Country (click in cell to access drop-down list)	
NUTS 2 (click in cell to access drop-down list once the Country is selected)	
NUTS 3 (click in cell to access drop-down list once the NUTS 2 is selected)	
Street, House number, Postal code, City	
Legal and financial information	
Type of partner	Higher education and research organisations
Partner size	
The organisation applies for an advance	NO
Legal status	Public
Sector of activity at NACE group level	

Legal and financial information	
VAT number (if applicable)	
Is your organisation entitled to recover VAT based on national legislation for the activities implemented in the project?	
Other identifier number	
Other identifier description	
PIC (from EC Participant Register)	

Contact	
Legal representative	Ms Andrea Bartkowski
Contact person	Prof. Dr. Thomas Hartmann
Email	thomas.hartmann@tu-dortmund.de
Telephone no.	

Motivation

Which of the organisation's thematic competences and experiences are relevant for the project?

TUDO has a rich experience on land management, land policy, flood risk management and resilience. TUDO was a.o. involved in JPI Urban FLOODLABEL, aimed to design, test and implement a smart governance tool. This prototype tool serves to activate civil actors to contribute to flood risk reduction to achieve more flood resilient cities.
TUDO is also involved in the COST Action LAND4FLOOD, which researches the role of private stakeholders in the implementation of NBS for flood risk areas, using land policy.

What is the role (contribution and main activities) of your organisation in the project?

Involved in all pilot projects to identify institutional barriers towards successful implementation of Sponge City Solutions for resilient groundwater management; Identify on instruments of land policy to enable implementation and accelerate decision-making of the Sponge City concept for resilient groundwater management, as solutions need land access; Integrate and reflect upon land policy instruments for the roadmap. Leads the work on Recommendations for actions on tailored land policy strategies.

Co-financing

Source	Amount	Percentage
Partner total eligible budget	0,00	100,00%

Origin of partner contribution			
Source of contribution	**Legal status of contribution**	**Amount**	**% of total partner budget**
Total			
Sub-total public contribution		0,00	0,00%
Sub-total automatic public contribution		0,00	0,00%
Sub-total private contribution		0,00	0,00%
Total		0,00	0,00%

State Aid	
State aid criteria self-check	
Criterium I: Is the partner involved in economic activities through the project?	
1. Will the project applicant implement activities and/or offer goods/services for which a market exists?	
2. Are there activities/goods/services that could have been undertaken by an operator with the view to making profit (even if this is not the applicant's intention)?	
Criterium II: Does the partner receive an undue advantage in the framework of the project?	
1. Does the project applicant plan to carry out the economic activities on its own i.e. not to select an external service provider via public procurement procedures for example?	
2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?	
Result of State aid criteria self-check:	To see the result, please answer all the questions above.
State aid relevant activities	
GBER scheme / de minimis	

B.1 Project Partner 4	
Partner number	4
Partner role	PP
Name of the organisation in original language	Bureau de Recherche Géologique et Minière (BRGM)
Name of the organisation in english	French Geological Survey
Organisation abbreviation	BRGM
Department / unit / division	
Partner main address	
Country (click in cell to access drop-down list)	France (FR)
NUTS 2 (click in cell to access drop-down list once the Country is selected)	Centre — Val de Loire (FRB0)
NUTS 3 (click in cell to access drop-down list once the NUTS 2 is selected)	Loiret (FRB06)
Street, House number, Postal code, City	Avenue Claude Guillemin 3 45100 Orléans
Homepage	www.brgm.fr
Address of department / unit / division (if applicable)	
Country (click in cell to access drop-down list)	
NUTS 2 (click in cell to access drop-down list once the Country is selected)	
NUTS 3 (click in cell to access drop-down list once the NUTS 2 is selected)	
Street, House number, Postal code, City	
Legal and financial information	
Type of partner	Higher education and research organisations
Partner size	
The organisation applies for an advance	NO
Legal status	Public
Sector of activity at NACE group level	
VAT number (if applicable)	

Legal and financial information	
Is your organisation entitled to recover VAT based on national legislation for the activities implemented in the project?	
Other identifier number	
Other identifier description	
PIC (from EC Participant Register)	

Contact	
Legal representative	Mr Philippe Freyssinet
Contact person	Dr. Nicolas Devau
Email	n.devau@brgm.fr
Telephone no.	

Motivation

Which of the organisation's thematic competences and experiences are relevant for the project?

As national geological survey, BRGM is the public reference institution for the sustainable management of water resources, including groundwater recharge by Nature Based Solution (NbS) in urban context. BRGM is an important service provider at the link between scientific research and technical services for public and private partners.

Several regional groundwater flow models have been developed by BRGM in the Northern part of France, including the territory of the urban community of Lens-Liévin (PP5) to improve management of groundwater resources. BRGM has demonstrated is expertise and knowledge in previous several European projects (JPI FRAME, H2020 AQUANES, JPI EVIBAN), characterizing efficiency of natured-based solutions or reuse technologies to improve management of groundwater resources.

What is the role (contribution and main activities) of your organisation in the project?

BRGM will evaluate the impact of public infrastructures (sewage system) and policies on urban groundwater systems. The goal is to improve water cycle conditions, notably protection of groundwater resources in terms of both quantity and quality. Measurements and testing will be performed in the pilot city Lens Liévin (CALL).

Tackling rhe rising influence of sewage systems on urban groundwater quantity and quality due to CC is an issue in many NWE cities, therefore an essential part of the tool-box for which BRGM is taking responsibility and will support PP in their local action planning. Further BRGM will coordinate topic-related and regional training activities.

Co-financing			
Source		Amount	Percentage
Partner total eligible budget		0,00	100,00%
Origin of partner contribution			
Source of contribution	Legal status of contribution	Amount	% of total partner budget
Total			
Sub-total public contribution		0,00	0,00%
Sub-total automatic public contribution		0,00	0,00%
Sub-total private contribution		0,00	0,00%
Total		0,00	0,00%
State Aid			
State aid criteria self-check			
Criterium I: Is the partner involved in economic activities through the project?			
1. Will the project applicant implement activities and/or offer goods/services for which a market exists?			
2. Are there activities/goods/services that could have been undertaken by an operator with the view to making profit (even if this is not the applicant's intention)?			
Criterium II: Does the partner receive an undue advantage in the framework of the project?			
1. Does the project applicant plan to carry out the economic activities on its own i.e. not to select an external service provider via public procurement procedures for example?			
2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?			

Result of State aid criteria self-check:	To see the result, please answer all the questions above.
State aid relevant activities	
GBER scheme / de minimis	

B.1 Project Partner 5	
Partner number	5
Partner role	PP
Name of the organisation in original language	Communauté d'Agglomération de Lens Liévin
Name of the organisation in english	Urban community of Lens Lievin
Organisation abbreviation	CALL
Department / unit / division	Water and Networks Department
Partner main address	
Country (click in cell to access drop-down list)	France (FR)
NUTS 2 (click in cell to access drop-down list once the Country is selected)	Nord-Pas de Calais (FRE1)
NUTS 3 (click in cell to access drop-down list once the NUTS 2 is selected)	Pas-de-Calais (FRE12)
Street, House number, Postal code, City	Rue Marcel Sembat Rue Marcel Sembat 62300 Lens
Homepage	https://www.agglo-lenslievin.fr/
Address of department / unit / division (if applicable)	
Country (click in cell to access drop-down list)	
NUTS 2 (click in cell to access drop-down list once the Country is selected)	
NUTS 3 (click in cell to access drop-down list once the NUTS 2 is selected)	
Street, House number, Postal code, City	
Legal and financial information	
Type of partner	Local public authority
Partner size	
The organisation applies for an advance	NO
Legal status	Public
Sector of activity at NACE group level	
VAT number (if applicable)	

Legal and financial information	
Is your organisation entitled to recover VAT based on national legislation for the activities implemented in the project?	
Other identifier number	
Other identifier description	
PIC (from EC Participant Register)	

Contact	
Legal representative	Mr Sylvain Robert
Contact person	Monsieur Gaétan Boyer
Email	gboyer@agglo-lenslievin.fr
Telephone no.	

Motivation

Which of the organisation's thematic competences and experiences are relevant for the project?

The urban community of Lens-Liévin (CALL) is involved in long-term investments to increase the efficiency of urban water infrastructures, notably sewage network. In parallel, public policies emphasize on the protection of urban (ground-)water resources. CALL has therefore a strong background and expertise on water management from local to territorial scale. With its targeted action to restore the urban water cycle by fostering groundwater recharge and minimizing the (detrimental) influence of the sewage system, it contributes to the management of key challenges for many cities in NWE.

What is the role (contribution and main activities) of your organisation in the project?

CALL's role in Rainbow concentrates on the management of sewage systems with their deteriorating influence on (ground-)water resources as a key challenge and key obstacle to realize sponge city concepts. This problem is typical for many NWE cities, especially in post-mining areas and frequently flooded regions.
CALL will assess the impact and efficiency of installations like infiltration plots, separate sewage systems to disconnect collect and drainage of rainwater, use of innovative operational plants to treat rainwater prior infiltration. Findings will provide valuable transnational input to the joint implementation of partners' pilot actions and the Roadmap/Toolbox.

Co-financing

Source	Amount	Percentage
Partner total eligible budget	0,00	100,00%

Origin of partner contribution			
Source of contribution	**Legal status of contribution**	**Amount**	**% of total partner budget**
Total			
Sub-total public contribution		0,00	0,00%
Sub-total automatic public contribution		0,00	0,00%
Sub-total private contribution		0,00	0,00%
Total		0,00	0,00%

State Aid	
State aid criteria self-check	
Criterium I: Is the partner involved in economic activities through the project?	
1. Will the project applicant implement activities and/or offer goods/services for which a market exists?	
2. Are there activities/goods/services that could have been undertaken by an operator with the view to making profit (even if this is not the applicant's intention)?	
Criterium II: Does the partner receive an undue advantage in the framework of the project?	
1. Does the project applicant plan to carry out the economic activities on its own i.e. not to select an external service provider via public procurement procedures for example?	
2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?	
Result of State aid criteria self-check:	To see the result, please answer all the questions above.
State aid relevant activities	
GBER scheme / de minimis	

B.1 Project Partner 6	
Partner number	6
Partner role	PP
Name of the organisation in original language	Ville de Bruxelles
Name of the organisation in english	City of Brussels
Organisation abbreviation	VBX
Department / unit / division	
Partner main address	
Country (click in cell to access drop-down list)	Belgique/België (BE)
NUTS 2 (click in cell to access drop-down list once the Country is selected)	Région de Bruxelles-Capitale/ Brussels Hoofdstedelijk Gewest (BE10)
NUTS 3 (click in cell to access drop-down list once the NUTS 2 is selected)	Arr. de Bruxelles-Capitale/Arr. Brussel-Hoofdstad (BE100)
Street, House number, Postal code, City	Rue des Halles 4 1000 Brussel
Homepage	https://www.bruxelles.be/
Address of department / unit / division (if applicable)	
Country (click in cell to access drop-down list)	
NUTS 2 (click in cell to access drop-down list once the Country is selected)	
NUTS 3 (click in cell to access drop-down list once the NUTS 2 is selected)	
Street, House number, Postal code, City	
Legal and financial information	
Type of partner	Local public authority
Partner size	
The organisation applies for an advance	NO
Legal status	Public
Sector of activity at NACE group level	
VAT number (if applicable)	

Legal and financial information	
Is your organisation entitled to recover VAT based on national legislation for the activities implemented in the project?	
Other identifier number	
Other identifier description	
PIC (from EC Participant Register)	

Contact	
Legal representative	Secrétaire Communal Dirk Léonard
Contact person	Mr Cédric Simons
Email	cedric.simons@brucity.be
Telephone no.	

Motivation

Which of the organisation's thematic competences and experiences are relevant for the project?

VBX has the competence to intervene in its public spaces and its patrimony (houses, schools, sport sites) trough development and renovation projects. It is competent to improve the quality of life of the citizen and by addressing challenges such as droughts, floodings, urban heat islands, etc. Brussels has expertise in urban development processes where water management solutions are being implemented using a multi-stakeholder approach, crossing the boundaries between private and public space and built and unbuilt space.

What is the role (contribution and main activities) of your organisation in the project?

VBX will do punctual interventions in public space and in its patrimony searching to implement different solutions to infiltrate rainwater in a less densely built peri-urban environment and to resurface groundwater in the densely built urban environment, overcoming barriers such as land-use conflicts, stability requirement and equal access to water. This work requires targeted community participation and will result in an action plan towards sponge city implementation in Brussels. The technical results of other pilots (particularly LHS, USTUTT, CALL) are of importance for the development of this local action plan, and vice versa.

Co-financing

Source	Amount	Percentage
Partner total eligible budget	0,00	100,00%

Origin of partner contribution			
Source of contribution	**Legal status of contribution**	**Amount**	**% of total partner budget**
Total			
Sub-total public contribution		0,00	0,00%
Sub-total automatic public contribution		0,00	0,00%
Sub-total private contribution		0,00	0,00%
Total		0,00	0,00%

State Aid	
State aid criteria self-check	
Criterium I: Is the partner involved in economic activities through the project?	
1. Will the project applicant implement activities and/or offer goods/services for which a market exists?	
2. Are there activities/goods/services that could have been undertaken by an operator with the view to making profit (even if this is not the applicant's intention)?	
Criterium II: Does the partner receive an undue advantage in the framework of the project?	
1. Does the project applicant plan to carry out the economic activities on its own i.e. not to select an external service provider via public procurement procedures for example?	
2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?	
Result of State aid criteria self-check:	To see the result, please answer all the questions above.
State aid relevant activities	
GBER scheme / de minimis	

B.1 Project Partner 7	
Partner number	7
Partner role	PP
Name of the organisation in original language	Coördinatie Zenne-Coordination Senne
Name of the organisation in english	Coordination Senne
Organisation abbreviation	CZ-CS
Department / unit / division	
Partner main address	
Country (click in cell to access drop-down list)	Belgique/België (BE)
NUTS 2 (click in cell to access drop-down list once the Country is selected)	Région de Bruxelles-Capitale/ Brussels Hoofdstedelijk Gewest (BE10)
NUTS 3 (click in cell to access drop-down list once the NUTS 2 is selected)	Arr. de Bruxelles-Capitale/Arr. Brussel-Hoofdstad (BE100)
Street, House number, Postal code, City	Akenkaai 2bis 1000 Brussel
Homepage	https://www.coordinationsenne.be/fr/index.php
Address of department / unit / division (if applicable)	
Country (click in cell to access drop-down list)	
NUTS 2 (click in cell to access drop-down list once the Country is selected)	
NUTS 3 (click in cell to access drop-down list once the NUTS 2 is selected)	
Street, House number, Postal code, City	
Legal and financial information	
Type of partner	Interest groups including NGOs
Partner size	
The organisation applies for an advance	NO
Legal status	Public
Sector of activity at NACE group level	
VAT number (if applicable)	

Legal and financial information	
Is your organisation entitled to recover VAT based on national legislation for the activities implemented in the project?	
Other identifier number	
Other identifier description	
PIC (from EC Participant Register)	

Contact	
Legal representative	Mevr. Dolores Baita
Contact person	Dhr. Jan Lippens
Email	lippens@coordinatiezenne.be
Telephone no.	

Motivation

Which of the organisation's thematic competences and experiences are relevant for the project?

CS-CZ strives for integrated and durable water management in the entire basin of the Senne river, from Wallonia to Brussels and Flanders. CZ-CS is a network organization that focuses on informational and educational activities, gathering and disseminating local knowledge of water. We have organized activities and conferences on integrated rainwater management in Brussels and have inventoried more than 200 water sources in the Brussels Region, closely working with citizens and communities to collect stories and testimonials and organize water-related events.

What is the role (contribution and main activities) of your organisation in the project?

CZ-CS will address the revalorization of water sources as groundwater release points (ecological hotspots, urban rivers, etc.) near the VBX and ULB intervention areas. The pilot engages citizens who live near the sources and springs in the urban landscape. The focus lies on education and co-creation, as well as reconnecting communities in recharge and release areas. As part of the tool-box we will provide methods, tools and best practise examples for community participation processes and awareness rising on groundwater related issues in joint efforts with the transnational project partners.

Co-financing

Source	Amount	Percentage
Partner total eligible budget	0,00	100,00%

Origin of partner contribution			
Source of contribution	**Legal status of contribution**	**Amount**	**% of total partner budget**
Total			
Sub-total public contribution		0,00	0,00%
Sub-total automatic public contribution		0,00	0,00%
Sub-total private contribution		0,00	0,00%
Total		0,00	0,00%

State Aid	
State aid criteria self-check	
Criterium I: Is the partner involved in economic activities through the project?	
1. Will the project applicant implement activities and/or offer goods/services for which a market exists?	
2. Are there activities/goods/services that could have been undertaken by an operator with the view to making profit (even if this is not the applicant's intention)?	
Criterium II: Does the partner receive an undue advantage in the framework of the project?	
1. Does the project applicant plan to carry out the economic activities on its own i.e. not to select an external service provider via public procurement procedures for example?	
2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?	
Result of State aid criteria self-check:	To see the result, please answer all the questions above.
State aid relevant activities	
GBER scheme / de minimis	

B.1 Project Partner 8	
Partner number	8
Partner role	PP
Name of the organisation in original language	Université Libre de Bruxelles
Name of the organisation in english	Free University of Brussels
Organisation abbreviation	ULB
Department / unit / division	Faculté d'Architecture La-Cambre Horta
Partner main address	
Country (click in cell to access drop-down list)	Belgique/België (BE)
NUTS 2 (click in cell to access drop-down list once the Country is selected)	Région de Bruxelles-Capitale/ Brussels Hoofdstedelijk Gewest (BE10)
NUTS 3 (click in cell to access drop-down list once the NUTS 2 is selected)	Arr. de Bruxelles-Capitale/Arr. Brussel-Hoofdstad (BE100)
Street, House number, Postal code, City	Avenue Franklin Roosevelt 50 1050 Ixelles
Homepage	https://archi.ulb.be
Address of department / unit / division (if applicable)	
Country (click in cell to access drop-down list)	
NUTS 2 (click in cell to access drop-down list once the Country is selected)	
NUTS 3 (click in cell to access drop-down list once the NUTS 2 is selected)	
Street, House number, Postal code, City	
Legal and financial information	
Type of partner	Higher education and research organisations
Partner size	
The organisation applies for an advance	NO
Legal status	Public
Sector of activity at NACE group level	
VAT number (if applicable)	

Legal and financial information	
Is your organisation entitled to recover VAT based on national legislation for the activities implemented in the project?	
Other identifier number	
Other identifier description	
PIC (from EC Participant Register)	

Contact	
Legal representative	Mr Daniele Carati
Contact person	Professor Luisa Moretto
Email	luisa.moretto@ulb.be
Telephone no.	

Motivation

Which of the organisation's thematic competences and experiences are relevant for the project?

The faculty of architecture of the ULB investigates design in its multiple forms and through scales: from building detailing to regional planning. The ULB team has experience in urban design and planning, with a specific focus on water and landscape design. Its main focus is on urban transformations and water dynamics as well as on local and regional planning, and participatory design. This latter is deeply explored through co-design processed and active construction sites to implement NbS solutions in urban areas involving citizens, associations, and public institutions.

What is the role (contribution and main activities) of your organisation in the project?

ULB explores design solutions for urban and peri-urban land use transformation, focusing on groundwater recharge and release. Design solutions range from small-scale punctual interventions (e.g. infiltration gardens, de-sealing operations) to large-scale implementations (e.g. parks, infiltration roads). Specific attention will be placed on stakeholder involvement in design and construction phases. ULB and its design activities will jointly with CZ-CS steer the transnational work on the tool-box related to community participation and decision-support as well as contributing to the local pilot projects and action plan of the transnational partners.

Co-financing

Source	Amount	Percentage
Partner total eligible budget	0,00	100,00%

Origin of partner contribution			
Source of contribution	**Legal status of contribution**	**Amount**	**% of total partner budget**
Total			
Sub-total public contribution		0,00	0,00%
Sub-total automatic public contribution		0,00	0,00%
Sub-total private contribution		0,00	0,00%
Total		0,00	0,00%

State Aid	
State aid criteria self-check	
Criterium I: Is the partner involved in economic activities through the project?	
1. Will the project applicant implement activities and/or offer goods/services for which a market exists?	
2. Are there activities/goods/services that could have been undertaken by an operator with the view to making profit (even if this is not the applicant's intention)?	
Criterium II: Does the partner receive an undue advantage in the framework of the project?	
1. Does the project applicant plan to carry out the economic activities on its own i.e. not to select an external service provider via public procurement procedures for example?	
2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?	
Result of State aid criteria self-check:	To see the result, please answer all the questions above.
State aid relevant activities	
GBER scheme / de minimis	

B.1 Project Partner 9	
Partner number	9
Partner role	PP
Name of the organisation in original language	Gemeente Zwolle
Name of the organisation in english	Municipality of Zwolle
Organisation abbreviation	Zwolle
Department / unit / division	Spatial and economic development
Partner main address	
Country (click in cell to access drop-down list)	Nederland (NL)
NUTS 2 (click in cell to access drop-down list once the Country is selected)	Overijssel (NL21)
NUTS 3 (click in cell to access drop-down list once the NUTS 2 is selected)	Noord-Overijssel (NL211)
Street, House number, Postal code, City	Postbus 10007 8000 GA Zwolle
Homepage	https://www.zwolle.nl/
Address of department / unit / division (if applicable)	
Country (click in cell to access drop-down list)	
NUTS 2 (click in cell to access drop-down list once the Country is selected)	
NUTS 3 (click in cell to access drop-down list once the NUTS 2 is selected)	
Street, House number, Postal code, City	
Legal and financial information	
Type of partner	Local public authority
Partner size	
The organisation applies for an advance	NO
Legal status	Public
Sector of activity at NACE group level	
VAT number (if applicable)	

Legal and financial information	
Is your organisation entitled to recover VAT based on national legislation for the activities implemented in the project?	
Other identifier number	
Other identifier description	
PIC (from EC Participant Register)	

Contact	
Legal representative	Mayor Peter Snijders
Contact person	Ms. Renate Postma
Email	r.postma@zwolle.nl
Telephone no.	

Motivation

Which of the organisation's thematic competences and experiences are relevant for the project?

Zwolle is a city and local authority responsible for urban planning and (ground)water management situated in the deepest part of the IJssel-Vecht delta. We are very vulnerable to climate change. Climate adaptation is one of our four priority themes.
To become a climate resilient delta, regional governments and other municipalities collaborate in the RIVUS network and Zwolle is also partner in the LIFE IP project NASCCELERATE (climate adaptation), which is linked to the Climate Campus network. With the RAINBOW project Zwolle complements these activities with a strong focus on the availability of fresh water in (near) future.

What is the role (contribution and main activities) of your organisation in the project?

Together with Deltares and in cooperation with all PP, Zwolle will develop comprehensive planning processes/a holistic view on groundwater, like a long-term Water Security Strategy (city scale) and test rainwater collection, infiltration and groundwater recharge solutions in a Water-Cycle (district scale). Doing so, Zwolle takes the transnational lead in the work on the roadmap as the general strategy document. The findings of the RAINBOW-pilot for a Water- Cycle are also made accessible as part of a Digital Delta Twin, currently under development.
Zwolle is the linking pin to the collaboration networks RIVUS, Climate Campus and
LIFE IP NASCCELLERATE. Network partners will be involved in the development of the strategy, pilot solutions and action plan as well as training activities.

Co-financing

Source	Amount	Percentage
Partner total eligible budget	0,00	100,00%

Origin of partner contribution			
Source of contribution	**Legal status of contribution**	**Amount**	**% of total partner budget**
Total			
Sub-total public contribution		0,00	0,00%
Sub-total automatic public contribution		0,00	0,00%
Sub-total private contribution		0,00	0,00%
Total		0,00	0,00%

State Aid	
State aid criteria self-check	
Criterium I: Is the partner involved in economic activities through the project?	
1. Will the project applicant implement activities and/or offer goods/services for which a market exists?	
2. Are there activities/goods/services that could have been undertaken by an operator with the view to making profit (even if this is not the applicant's intention)?	
Criterium II: Does the partner receive an undue advantage in the framework of the project?	
1. Does the project applicant plan to carry out the economic activities on its own i.e. not to select an external service provider via public procurement procedures for example?	
2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?	
Result of State aid criteria self-check:	To see the result, please answer all the questions above.
State aid relevant activities	
GBER scheme / de minimis	

B.1 Project Partner 10	
Partner number	10
Partner role	PP
Name of the organisation in original language	Stichting Deltares
Name of the organisation in english	Deltares
Organisation abbreviation	Deltares
Department / unit / division	Subsurface and Groundwater Systems
Partner main address	
Country (click in cell to access drop-down list)	Nederland (NL)
NUTS 2 (click in cell to access drop-down list once the Country is selected)	Zuid-Holland (NL33)
NUTS 3 (click in cell to access drop-down list once the NUTS 2 is selected)	Delft en Westland (NL333)
Street, House number, Postal code, City	Boussinesqweg 1 2629 HV Delft
Homepage	https://www.deltares.nl/
Address of department / unit / division (if applicable)	
Country (click in cell to access drop-down list)	
NUTS 2 (click in cell to access drop-down list once the Country is selected)	
NUTS 3 (click in cell to access drop-down list once the NUTS 2 is selected)	
Street, House number, Postal code, City	
Legal and financial information	
Type of partner	Higher education and research organisations
Partner size	
The organisation applies for an advance	NO
Legal status	Public
Sector of activity at NACE group level	
VAT number (if applicable)	

Legal and financial information	
Is your organisation entitled to recover VAT based on national legislation for the activities implemented in the project?	
Other identifier number	
Other identifier description	
PIC (from EC Participant Register)	

Contact	
Legal representative	Ir. Gerard Blom
Contact person	Ir. Nanco Dolman
Email	Nanco.Dolman@deltares.nl
Telephone no.	

Motivation

Which of the organisation's thematic competences and experiences are relevant for the project?

Deltares is a leading (not-for-profit) and internationally operating specialist consultancy and applied research institute in the field of water and subsurface. Within our mission area Sustainable Deltas we develop action perspectives to ensure that ecosystems and natural resources will be available for future generations in urbanised deltas. Water and the subsurface play a guiding role in the missions for the regional water resources availability and sustainable use of freshwater in cities, as e.g. the city of Zwolle and its region in the IJssel-Vecht Delta planning for a water-circular “sponge” city, to achieve self-sufficiency in availability of freshwater in the (near) future.

What is the role (contribution and main activities) of your organisation in the project?

Deltares will steer with Zwolle the transnational cooperation to develop comprehensive planning processes, see PP Zwolle description. Based on the draft roadmap as the general strategy document Deltares will support the transnational PPs in scaling up the pilot implementations into local action plans.
Within this project Deltares is the linking pin to other “Sponge City” related initiatives in Europe, like NBRACER - Nature Based Solutions for Atlantic Regional Climate Resilience (https://nbracer.eu/); SpongeScapes – Evidence and Solutions for improving SPONGE Functioning at LandSCAPE Scale in European Catchments for increased Resilience of Communities against Hydrometeorological Extreme Events (https://cordis.europa.eu/project/id/101112738); the China Europe Cooperation on Sponge Cities (CECoSC): https://cewp.eu/; DroBE: Droughts in the Built Environment (NWO, the Netherlands), which includes the ‘Thirsty Cities’ proposal: https://www. nwo.nl/en/calls/nwa drought-in-the-builtenvironment; European Urban Agenda, which includes Water as a theme (sponge city/water sensitive city/water scarcity and floods): https://www.urbanagenda. Urban initiative.eu/partnerships /greeningcities.

Co-financing			
Source		Amount	Percentage
Partner total eligible budget		0,00	100,00%
Origin of partner contribution			
Source of contribution	Legal status of contribution	Amount	% of total partner budget
Total			
Sub-total public contribution		0,00	0,00%
Sub-total automatic public contribution		0,00	0,00%
Sub-total private contribution		0,00	0,00%
Total		0,00	0,00%
State Aid			
State aid criteria self-check			
Criterium I: Is the partner involved in economic activities through the project?			
1. Will the project applicant implement activities and/or offer goods/services for which a market exists?			
2. Are there activities/goods/services that could have been undertaken by an operator with the view to making profit (even if this is not the applicant's intention)?			
Criterium II: Does the partner receive an undue advantage in the framework of the project?			
1. Does the project applicant plan to carry out the economic activities on its own i.e. not to select an external service provider via public procurement procedures for example?			
2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?			

Result of State aid criteria self-check:	To see the result, please answer all the questions above.
State aid relevant activities	
GBER scheme / de minimis	

Associated organisations

No associated organisations

C - Project description

C.1 Project overall objective

Below, you can see the Programme priority specific objective your project will contribute to (chosen in section A.1.).

2.4: Promoting climate change adaptation and disaster risk prevention and resilience, taking into account ecosystem-based approaches

Project overall objective

Now think about your main objective – what do you aim to achieve by the end of your project? Remember your project needs to contribute to the programme's objective.
Your objective should:

- be realistic and achievable by the end of the project, or shortly after;
- specify who needs project results and in which territory;
- be measurable – indicate the change you are aiming for.

RAINBOW will enhance capacities of cities across NWE to manage and restore soil and groundwater as a vital component for urban climate change resilience [against flooding, drought, decreased water quality and land subsidence]. Through a jointly developed roadmap, a transferable place-based solution for groundwater recharge and release, and targeted training of administrative staff and service providers, cities across NWE will be equipped to restore the (impaired) sponge function of urban subsoil

C.1.a Project specific objectives

In Step 1: List your foreseen project specific objectives (up to three)
In Step 2: List your project specific objectives (up to three)

To jointly develop a Sponge Cities Roadmap implemented in at least four partner cities which will enable cities across NWE to deploy sustainable dynamic groundwater resource management tailored to their needs and challenges, enabling them to make urban areas more permeable and capable of absorbing and recharging (rain) water, mitigating flood risks, and tackling water scarcity/pollution.

Enabling municipalities to tackle technical and analytical issues, implementation barriers as well as stakeholder involvement for groundwater recharge and release as a key element of sponge city concepts. This to be done by collectively designing and testing integrated water cycle solutions within the toolbox framework through engaging diverse but complementary , site-specific pilot actions in Stuttgart, Lens-Liévin, Zwolle, and Brussels.

From science to practice: To upskill local and regional administrative professionals and the related service providing community (urban planners, civil engineers, decision / policy makers) through targeted training modules on tools and approaches for groundwater resource management

C.2 Project relevance and context

C.2.1 What are the common territorial challenge(s) that will be tackled by the project?

Please describe the territorial challenges and opportunities your project addresses in the NWE area. Why is transnational cooperation needed to address these challenges and opportunities?

The increasing frequency of extreme dry and wet periods in urban/peri-urban areas in NWE due to climate change (CC), results in water-related disaster risks and water resources management issues, including water quality, availability, and groundwater-related land subsidence. Droughts reduce renewable freshwater resources, while heavy rain necessitates effective water retention. In both cases, subsoil and groundwater bodies play a central balancing role and have a potential to act as 'sponges'. All water management strategies to enhance CC resilience must comply with the Water Framework Directive, balancing groundwater abstraction and recharge.
Sponge city concepts suggest ways to design and transform cities so that rainwater is absorbed where it falls, reducing stormwater risks and stabilising groundwater resources. However, their implementation in cities is impeded by technical implementation challenges, subsoil contamination, lack of space, user conflicts, lacking awareness of residents and reluctant urban managers. To effectively tackle these obstacles, close cooperation between urban actors, affected stakeholders and civil society is needed.
RAINBOW brings together partners from four cities facing these challenges implementing sustainable (ground)water management, prototypical for cities across NWE: Floods/fresh water scarcity in dense residential areas (Bruxelles), interactions between regional groundwater fluxes and sewage systems (Lens-Liévin), contamination in brownfield areas for urban redevelopment (Stuttgart) and managing water needs in polder/delta neighbourhoods with big seasonal rainfall differences (Zwolle). Through complementary pilot actions, RAINBOW is able to develop thoroughly tested and transferable tools for the introduction of sustainable groundwater management into urban and spatial planning, to be transferred and tailored to the specific contexts of cities across NWE. A jointly developed Roadmap bundles the transdisciplinary expertise.

C.2.2.a How does the project tackle identified common challenges and/or opportunities

Please describe if your project activities will develop and test new approaches; and/or if they will adapt and implement existing approaches for further uptake.

Challenges related to CC adaptation and sustainable groundwater management range from water quality, quantity and availability to land subsidence. The Sponge City concept provides solutions overcoming barriers for implementation in resources, actors and institutions like fragmented planning processes, a lack of mutual understanding among participating disciplines, little experience with complex processes in the subsoil, interaction between sewage system and drinking water supply, or ensuring integration of and support by private landowners and residents.
To streamline the implementation of Sponge City measures, our comprehensive strategic approach-the Roadmap for Sponge Cities-will guide municipalities through decision-making process on effective technologies and implementation. Each pilot city will implement the roadmap through an action plan tailored to their specific context.
Pilot projects in the involved cities will address: (i)Brussels: urban recharge/release in dense urban /peri-urban areas considering community needs; (ii)mitigating flood risks and managing interactions between regional groundwater fluxes and sewage systems in Liens-Liévin; (iii)addressing subsoil contamination in former industrial areas and its effect on groundwater resources in Stuttgart; and (iv) implementing a comprehensive approach to share water surpluses and balance deficits in a polder /delta neighbourhood, based on subsoil, surface water and rainwater levels in Zwolle. Based on these pilots, we will jointly develop a solution toolbox, containing (i)technical analysis and design from each pilot city; (ii)implementation approaches considering local socio-spatial conditions and groundwater dynamics; (iii)best-practices for stakeholder involvement
Finally, to equip relevant stakeholders with the capacities to apply the project outputs and to introduce and monitor sustainable groundwater management measures, the RAINBOW partners will offer a modular training scheme for the partner regions

C.2.2.b What is new about the approach the project takes?

Please describe how your approach is different from the current situation or existing practice. Explain what you expect to change in the sector/Programme area/participating countries.

RAINBOW recognizes the intrinsic value of groundwater as a vital resource and the soil-water system as guiding principles for planning activities and CC adaptation strategies. The project advances the transition of urban and peri-urban to Sponge Cities, with a specific focus on groundwater systems as an integral component of the natural water cycle. While Blue-Green Infrastructure (BGI), Nature-based Solutions (NbS) and planning interventions traditionally emphasise visible aspects of the urban water cycle, such as infiltration, evapotranspiration, and maintaining surface water health, whereas our focus lies beneath the surface - the groundwater systems. Goal and expected change in the urban planning and environmental sector is to enable a paradigm shift in planning practices, from mere consumption to sustainable dynamic groundwater resource management as a key balancing factor in the urban water cycle.
Interventions for rainwater management and water in the city are often in isolation, focusing on enhancing liveability without a comprehensive understanding of water system interactions. We go beyond existing practices by focussing on groundwater bodies as public property with a fundamental role for climate adaptation measures stabilising natural water cycles. The project aims to enhance collaborations for groundwater preservation between densely built and unbuilt space, private and public space as well as urban and peri-urban space. Through dynamic groundwater resource management, considering holistic interventions for both groundwater recharge and groundwater release, we will contribute to mitigate urban challenges such as the urban heat island effect, droughts, overexploitation of groundwater resources and floods.
Transnational and transdisciplinary cooperation facilitates removal of implementation barriers, such as land-use conflicts, increased maintenance, pollution risks, and the upscaling of punctual technical interventions in public spaces.

C.2.4 Who will benefit from your project?

In the first column of each row, please select one of the pre-defined target groups from the drop-down list. In the second column explain in more detail exactly who will benefit from your project. For example, if you choose the category education, you need to explain which specific schools or groups of schools and in which territory.

Target Group	Specification
Local public authority	Municipalities like Brussels, Stuttgart, Zwolle, Intermunicipal cooperation authorities like Lens-Lievin agglomeration community and Lille European Metropolis Capacity building of urban planning departments to obtain a paradigm shift from traditional rainwater management to sustainable and participatory solutions, and the evaluation of the impacts of land use on groundwater recharge and release. Each pilot will engage one twin city.
Regional public authority	Brussels Environment, Brussels Perspective, Brussels Mobility, Province of Vlaams-Brabant, Province of Overijssel, Regional Water Authority WDOD, Regional Council, Metropolitan region Stuttgart, Provinces (Netherlands) Setup and implementation of regional monitoring guidelines and strategies based on indicator framework to assess the influence of CC and benefit of sustainable groundwater management solutions.

Target Group	Specification
Infrastructure and (public) service provider	Vivaqua, HYDRIA-Brussels Capital Region, Veolia Eau, Ministry of Infrastructure and Water Management Implementation of updated management tools to consider groundwater dynamics in CC context, implementation of innovative monitoring concept and application of modelling tools.
Sectoral agency	State institute for the environment Baden-Württemberg, Artois Picardie water agency (France), Regional consultative body RIVUS, Climate Campus - greater Zwolle region (including universities, NGO's, project developers, housing corporation, consultants, etc.) Implementation of project results in Guidance Documents, knowledge transfer to decision-makers, general public, consulting agencies, NGOs, etc.
Higher education and research organisations	Deltares, TU Dortmund University, University of Stuttgart, Université Libre de Bruxelles. French Geological Survey BRGM Upgrade of scientific knowledge, dissemination of project results to students and the international scientific community.
Education/training center and school	Training association for soil and contaminated sites, Baden-Württemberg, Germany and ADOPTA for Northern France Dissemination of project results to environmental departments of local administrations and consulting engineers.
SME	Private companies mostly from the service providing sector for planning and engineering, additionally SMEs offering innovative measuring techniques like ToekomstSterk, SMEs of the innovation cluster bw-engineers from Baden-Württemberg (17 SMEs as members) and AQUANOVA, competitiveness cluster in France with approx. 320 members The participation in trainings of WP3 offer chances to develop and test innovative solutions for monitoring techniques, new market opportunities.
General public	Citizens, users of public areas, private landowners, vulnerable population groups Improved quality of life reducing disaster risks and creation of greened areas for leisure and recreation and cooling down urban heat island effects, greater awareness on the effectiveness of BGI/NBS polutions.
National public authority	Rijkswaterstaat, Ministry of infrastructure and water (NL), German Federal Institute for Research on Building, Urban Affairs and Spatial Development, French biodiversity agency Rising awareness of political actors to reduce groundwater exploitation and foster artificial groundwater recharge and release with respect to land use aspects. Provide guidelines, legal regulations and financial incentives for private landowners to implement BGI/NBS on their land.
International organisation, EEIG	Groundwater group of the International Schelde Commission, International Association of Hydrogeologists (IAH) Upgrade of scientific knowledge, practical application of project results.

Target Group	Specification
Interest groups including NGOs	Coördinatie Zenne-Coordination Senne, herbronnen.ressources,Brussels sewer museum Creating expertise on awarenes building for rainwater management and showcasing best practices for engaging local communities

C.2.6 Which synergies with past or current EU and other projects or initiatives will the project make use of?

Project or Initiative	Synergy

C.2.7 How does the project build on available knowledge?

Please describe what the project draws on e.g., from EU and/or other projects, and other available knowledge, and how the project capitalises on this knowledge.

The project's multidisciplinary nature requires input from various domains and is built on baseline knowledge provided by the project partners gained through their participation in a wide range of research projects. Key knowledge links exist to: Interreg NSR project CATCH (2017-2022) & Thirsty Cities (2023-present), a study under the DroBE (Droughts in the Built Environment) program of the Dutch Research Council through PP Zwolle + Deltares.
LHS and USTUTT ensure the link to Managed Aquifer Recharge research project MARSOL (FP7) and related training network MARSOLUT (MSCA-ITN). The transition towards water sensitive cities will be adjusted in RAINBOW context by City of Brussels and the ULB transfering results from the collaboration on the project BrusseauBis (Water-Sensitive Brussels), project 2020-EPF-17g, funded by Innoviris Brussels.
TU Dortmund will transfer land policy strategies providing access to private land developed in COST ACTION LAND4FLOOD to the wider context of RAINBOW.

C.3 Project partnership

Describe the structure of your partnership and explain why these partners are needed to implement the project and to achieve project objectives.

Climate change is significantly affecting natural processes like rainwater infiltration, groundwater recharge, and groundwater release. These processes are currently influenced by land use, infrastructure, and water management. The project's objectives and key drivers are reflected in the partnership of organizations from NL, BE, FR and DE.
The project partners are:
- Cities: Aiming to find local solutions that enhance urban design and living conditions
- Regional/National Knowledge and Engineering Partners: Addressing infrastructure and water management challenges at a regional level
- Academic Partners: Developing practical tools based on sound scientific, technical, architectural, and participatory research
- Civil Society: Creating methods for public participation and co-creation

While the project follows a quadruple helix model, SMEs and business support organizations are not included. This is because the project focuses on public domain issues rather than market-driven technologies. However, the private sector—especially urban planners, engineering, and consulting firms—will be targeted for dissemination and training through the project partners.

The project aims to develop strategies and replicable solutions for sustainable groundwater management, working towards the concept of a "Sponge City." While groundwater bodies are considered foundational for this, each project partner will address specific challenges related to groundwater release and recharge, leveraging their unique expertise and experience for collaborative, transnational solutions.
In particular:
- Zwolle, facing big seasonal (rainfall) differences in a delta/polder area, is leading the way in Sponge City strategies
- Deltares will focus on developing a comprehensive strategy that takes a holistic approach to groundwater management in the city
- LHS as a city with a strong focus on handling contamination in urban development processes
- USTUTT will explore urban design for brownfield redevelopment, considering restrictions on groundwater recharge and infiltration due to pollution and land use
- BRGM and CALL will be focussing on the impact of the public water network infrastructures and public policies to improve water cycle conditions in the urban context of a post-mining area.
- VBX will work on improving groundwater recharge and release by punctual and infrastructural interventions in urban environments rich of land-use conflicts
- ULB will explore design solutions for transformation and adaptation, while CZ-CS address public perception of water sources as release points of groundwater, focusing on community co-creation and participatory methodologies
- TUDO will link spatial planning with land management and flood risk management, focusing on governance effectiveness and overcoming institutional barriers to support technical project results.

Pilot actions in the four cities - whose specific contexts and issues are both complementary and prototypical for municipalities across NWE – are the core of transnational co-operation. A pilot implementation plan ensures regular exchange and discussion of insights (e.g. stakeholder participation, technical and regulatory aspects), thus allowing partners to build upon the complementary specific expertise and experience. It further provides a strong foundation for the

subsequent joint development of the solution as well as the training schemes and Roadmap for Sponge Cities.
Capacity building is a key transnational element. Academic partners will lead training programmes for technical experts, service providers, and civil servants and staff of cities and public entities. Additionally, outreach efforts will aim to scale the project’s results across the NWE territory. The involvement of various associated organisations covers a diverse range of sectoral agencies, infrastructure providers, and training institutions, enhancing the project's transferability, scalability, and dissemination.

C.4 Project work plan

A maximum of 3 work packages is allowed in every project work plan in a regular call. In the case of a small-scale projects call, maximum 1 work package is allowed. Please be aware that you will not be able to submit your AF if you are above those limits.

Number	Work package name
1	Sponge City Strategy: restoring water cycles / balancing recharge and reuse in Northwest Europe
2	Sponge City Pilots: analysis, design and implementations for sustainable groundwater cycle pilots
3	The RAINBOW Academy - Establish targeted training modules for relevant stakeholder groups involved

Work package 1

Work package title

Sponge City Strategy: restoring water cycles / balancing recharge and reuse in Northwest Europe

Project Specific Objectives

Your objectives should be:

- realistic and achievable by the end of the project;
- specific (who needs project outputs delivered in this work package, and in which territory);
- measurable – indicate the change you are aiming for.

Define one project specific objective that will be achieved when all activities in this work package are implemented and outputs delivered.

To jointly develop a Sponge Cities Strategy and action plan implemented in at least four partner cities which will enable cities across NWE to deploy sustainable dynamic groundwater resource management tailored to their needs and challenges, enabling them to make urban areas more permeable and capable of absorbing and recharging (rain) water, mitigating flood risks, and tackling water scarcity/pollution.

Think about the communication objective that will contribute to the achievement of the specific objective. Communication objectives aim at changes in a target audience's behaviour, knowledge or belief.

Key target groups are cities in NWE with a focus on regional city networks around PPs cities. Dedicated communication among such existing networks e.g. through the AP (VNG) and their involvement in the validation of the approach will help to convince and support them in the uptake of RAINBOW outputs. Key feature will be city visits and podcasts offered, addressing key staff and decision makers in cities and motivating them for taking up the strategy and action planning methodology.

Work package summary

The SC Roadmap is the main output of WP1, entailing the following activities:
A 1.1 SC Roadmap baseline, needs assessment, outline and preliminary design;
A 1.2 Identifying strategies of land policy to activate landowners based on IRR (three-step institutional resource regime analysis, synergy with WP2);
A 1.3 SC Roadmap defining the generic strategic approach
A 1.4 Dedicated city action plans (synergy with WP2);
A 1.5 Promoting uptake in the city networks (synergy with WP3).
The SC Roadmap provides a jointly developed framework and guidance how to apply SC planning and policy concepts in the specific city situation. City action plans result from applying the roadmap to define and schedule dedicated sponge actions to be locally implemented. Promoting activities facilitating the uptake of the RAINBOW outputs support cities within the partners' regional city networks being convinced to go this way forward.

Activities

Activity 1.1	
Title	Identifying strategies of land policy to activate landowners based on IRR (synergy with WP2)
Start period	Period 1, 1 - 6
End period	Period 4, 19 - 24
Description [1000 characters]	Activating private landowners to realize sponge city measures is key. Therefore, PP3 conducts a three-step institutional resource regime analysis (IRR) with support by PP10 (urban hydrology), PP8 (urban planning), PP 2 (role of pollutants), and the city pilots. a. LOCATION: GIS-based mapping of ownership, land uses and rights of potential sponge city's locations for groundwater management in urban areas. b. ACTORS: Qualitative in-depth inventory of interests and agency of actors (land owners and users) based on a Q-methodology (landowners' interest describes the motivation of behaviour, while their agency represents the capacity to act). c. STRATEGIES: Identification of strategies and the role of incentive programmes of land policy to activate landowners implementing the sponge city concept. This activity feeds into working sessions with the PPs are foreseen as part of the Mutual Learning Platform (MLP) during the 2nd,3rd and 4th partner meetings (A2.1).

Deliverables 1.1

Running number	Deliverable title	Description	Delivery period
D.1.1.1	IRR workplan and schedule	The workplan defines data requirements and preparation (especially property data) for each of the steps of the IRR analysis, and the contributions of knowledge partners (PP2, PP4, PP8, PP10) and the city partners. This includes a time schedule for empirical data collection (interviews and q-method).	Period 1 , 1 - 6

Deliverables 1.1			
Running number	**Deliverable title**	**Description**	**Delivery period**
D.1.1.2	Analysis report: strategies of land policy to activate landowners for sponge city concepts	a) Description and user-stories of GIS-based viewer of locations for stakeholder communication in WP2. b) Report on types of actors' interests and agency (based on q-method). c) Policy guideline on strategies for case studies (WP 2) and a replication (WP 3) The target audience are policy makers.	Period 3 , 13 - 18

Activity 1.2	
Title	Development of Sponge City Strategy SCS (synergy with WP2)
Start period	Period 1, 1 - 6
End period	Period 6, 31 - 36
Description [1000 characters]	The SCS Strategy is a jointly developed and widely applicable planning strategy and guidance how to apply SC concepts in the specific city situation. It will be built on the principles defined in the recently published EU Water Resilience Strategy and substantiate the more generic UAST tool of the Climate-ADAPT platform, tailored to the concrete needs of cities. The focus is on the built environment to support municipalities, also in their interaction with landowners. Activities start with the contours of the SCS, defining format, layout principles and demands on usability of cities as target audience. The PPs are considered as user group of the SCS and cooperate in working sessions as part of the Mutual Learning Platform (MLP, A2.1) during the 1st and 2nd partner meetings. This will focus on knowledge baseline and cities' needs. The Strategy includes lessons learned, guidance and processes for developing and implementing local action plans. The development of the SCS will be validated in the four partner cities as part of the MLP during the 3rd and 4th workshop. (A2.1).

Deliverables 1.2			
Running number	**Deliverable title**	**Description**	**Delivery period**
D.1.2.1	SCS baseline and needs	Overview of: a. Relevant literature, studies and collection of best practice cases. Analysis of policies and strategies, both in situation of pilot cities, and outside RAINBOW in NWE. b. Assessment of needs from four city pilots (WP2): Brussels (B), Lens Lievin (F), Stuttgart (D), and Zwolle (NL).	Period 1 , 1 - 6
D.1.2.2	SCS - strategy outline and preliminary design	Outline and design of the SCS with a focus on the product definition and first contours: a. needs of stakeholders and city administration (user stories); b. Identification of target audience; c. Embedding of SCS in existing procedures of cities. d. Define structure / main issues to be considered	Period 2 , 7 - 12
D.1.2.3	SCS: sponge city planning strategy	The SCS – in Dutch, English, French and German – includes the jointly developed planning strategy as guidance how to apply SC concepts in the specific city situations. Experience and lessons learnt from implementation of elements of the action plan in the 4 partner cities are summarized in the SCS.	Period 6 , 31 - 36

Activity 1.3	
Title	City Action Planning and implementation in 4 cities
Start period	Period 4, 19 - 24
End period	Period 7, 37 - 42

Activity 1.3	
Description [1000 characters]	The PPs jointly develop one draft action plan for sponge cities (D1.4.1). In a second step, the cities of Brussels, Lens-Lieving, Stuttgart and Zwolle will adapt it to their respective local contexts (D1.4.2-5) and begin implementation. Lessons from the first implementation steps will be integrated into a final version of the action plan (D.1.4.6) and the SC roadmap. This activity entails the following steps: a. Stakeholder mapping in city pilots and analysis of the role of landownership in SC context b. Preparing City Action Plans for four cities (synergy with WP2); c. Validation of SCS as guidance how to apply SC planning and policy concepts in the specific city situations. d. Implementation of the four City Action Plans will start during project lifetime and with first actions /measures specified in the action plan e. Working sessions with the PPs as part of the MLP (A 2.1) during its 3rd and 4th workshop. f. Consolidate feedback from relevant stakeholders and provide recommendations for facilitating further uptake in NWE.

Deliverables 1.3

Running number	Deliverable title	Description	Delivery period
D.1.3.1	Draft action plan for sponge cities	This draft of the jointly developed action plan will be built on the draft SCS and define major elements and procedures for cities' action planning. The drafts define further work to be done and enables transnational exchange in action plan development.	Period 4 , 19 - 24
D.1.3.2	Dedicated City Action Plans for Brussels	City Action Plans are prepared for each city. These include working steps, timeline and responsibilities. Actions can be differentiated in measures, community outreach, organization and regional contributions. Implementation will start with specific actions defined already during project lifetime	Period 5 , 25 - 30
D.1.3.3	Dedicated City Action Plans for Zwolle	City Action Plans are prepared for each city. These include working steps, timeline and responsibilities. Actions can be differentiated in measures, community outreach, organization and regional contributions. Implementation will start with specific actions defined already during project lifetime	Period 5 , 25 - 30

Deliverables 1.3			
Running number	**Deliverable title**	**Description**	**Delivery period**
D.1.3.4	Dedicated City Action Plans for Stuttgart	City Action Plans are prepared for each city. These include working steps, timeline and responsibilities. Actions can be differentiated in measures, community outreach, organization and regional contributions. Implementation will start with specific actions defined already during project lifetime.	Period 6, 31 - 36
D.1.3.5	Dedicated City Action Plans for Lens-Lievin	City Action Plans are prepared for each city. These include working steps, timeline and responsibilities. Actions can be differentiated in measures, community outreach, organization and regional contributions. Implementation will start with specific actions defined already during project lifetime	Period 6, 31 - 36
D.1.3.6	Final SC Action Plan	Lessons from the first implementation steps will be integrated into a final version of the action plan (D.1.4.6) and the SCS. This activity entails a thorough reflection on the cities experiences gathered, which ensures guidance and practical recommendations tailor made for cities demands.	Period 7, 37 - 42

Activity 1.4	
Title	Promoting uptake in the city networks (synergy with WP3)
Start period	Period 4, 19 - 24
End period	Period 7, 37 - 42

Activity 1.4	
Description [1000 characters]	A.1.4 is a communication activity aimed at expanding the Sponge City concept beyond the pilot cities, engaging other NWE cities to promote uptake of SCS and action planning methodology. It is targeted at cities and specificly regional city networks around the PPs, and will also support WP2 uptake endeavours. Activities make use of existing networks such as ICLEI and Aquanova (AO5), and country associations of municipalities, such as VNG in the Netherlands (AO3). It is a central element that each PP is considered an SC Roadmap advocate, and each of the PP cities will identify follower cities and organises a visit to at least one of them. These peer-to-peer site visits strengthen regional networks while also serving as early opportunities to share insights and emerging results from the project. A questionnaire facilitates bi-directional communication and will serve as validation process for the SCS and action plan. In this context a sponge city podcast series will be developed and coordinated by VBX and ULB. This Captures cities and stakeholders' perspectives and supports uptake across NWE.

Deliverables 1.4

Running number	Deliverable title	Description	Delivery period
D.1.4.1	Communication schedule for dissemination and uptake	The communication schedule outlines how to approach regional city networks in an information and uptake campaign about the SCS, action plan and their validation. This includes a framework to shape and prepare the follower-city visits and podcasts plus a set of info materials and a policy briefing.	Period 3 , 13 - 18
D.1.4.2	Site visit reports	Documentation of the visits, participation, quality of outreach achieved and outlining medium- to long term activities agreed, how the PP cities will support the uptaking cities in their upcoming implementation.	Period 5 , 25 - 30
D.1.4.3	Questionnaire and validation feedback	A questionnaire will provide consolidated feedback from the city networks and related stakeholders and recommendations for facilitating further uptake of Sponge Cities concepts in NWE.	Period 6 , 31 - 36

Deliverables 1.4			
Running number	**Deliverable title**	**Description**	**Delivery period**
D.1.4.4	SC podcasts	8 podcasts, 2 per PP city, developed and implemented in the timespan from period 3-6 are published through municipal and institutional websites, social media platforms, and Spotify, with the aim of inspiring stakeholders in other European regions, thus supporting dissemination of project outputs.	Period 6 , 31 - 36

Outputs

Regarding the drop-down list of Programme output indicators:
For every project output you define, you must choose one Programme output indicator to contribute to from the drop-down list and quantify your contribution.
Overall, as a project you must contribute to a minimum of 2 out of the 4 following output indicators.
Important: Please note that if you choose output indicator O.2 then you must also choose output indicator O.3 AND one more output indicator for a total of 3 out of 4 (e.g., O.2, O.3 and O.4).

- O.1: Strategies and action plans jointly developed
- O.2: Pilot actions developed jointly and implemented in projects
- O.3: Jointly developed solutions
- O.4: Participations in joint training schemes

Output 1.1	
Output Title	Sponge City Strategy
Programme Output Indicator	2.4.O.1: Strategies and action plans jointly developed
Measurement Unit	strategy/action plan
Target Value	1,00
Delivery period	Period 6, 31 - 36
Output Description	SC Strategy for NWE cities and municipalities. This includes a jointly developed planning strategy as guidance how to apply SC planning and policy concepts in the specific city situation. Experience and lessons learnt from the 4 city pilot actions (Output 1.2) are summarized in the SCS.
Output 1.2	
Output Title	SC Action Plan implemented in 4 cities
Programme Output Indicator	2.4.O.1: Strategies and action plans jointly developed

Output 1.2	
Measurement Unit	strategy/action plan
Target Value	1,00
Delivery period	Period 7, 37 - 42
Output Description	A Sponge City Action Plan and its replication, implemented for the cities of Brussels, Liens-Liévin, Stuttgart, and Zwolle. These include working steps, timeline and responsibilities. City Action Plans set in place dedicated sponge actions for each city and how to deal with technical and institutional obstacles. Actions can be differentiated in measures, community outreach, organization and regional contributions. Implementation, supported by letter of commitment, will start before project end.

Investments

Work package 2

Work package title

Sponge City Pilots: analysis, design and implementations for sustainable groundwater cycle pilots

Project Specific Objectives

Your objectives should be:

- realistic and achievable by the end of the project;
- specific (who needs project outputs delivered in this work package, and in which territory);
- measurable – indicate the change you are aiming for.

Define one project specific objective that will be achieved when all activities in this work package are implemented and outputs delivered.

Enabling municipalities to tackle technical and analytical issues, implementation barriers as well as stakeholder involvement for groundwater recharge and release as a key element of sponge city concepts. This to be done by collectively designing and testing integrated water cycle solutions within the toolbox framework through engaging diverse but complementary , site-specific pilot actions in Stuttgart, Lens-Liévin, Zwolle, and Brussels.

Think about the communication objective that will contribute to the achievement of the specific objective. Communication objectives aim at changes in a target audience's behaviour, knowledge or belief.

Enhancing knowledge sharing via the mutual learning platform between project and associated partners on sustainable groundwater recharge and release, based on individual pilot experiences. Thus exchanging best practices to implement the Sponge City Roadmap and as input to the WP 3 trainings, offer continuous reflection, and design and test the toolbox. Additionally, disseminating information on pilot projects to stakeholders and communities through a joint framework, fostering broad engagement across NWE.

Work package summary

WP2 enables transnational cooperation through mutual learning across four pilot areas. Pilots act as collaborative sites where actors jointly design and test integrated methods and tools contributing to the Sponge city toolbox. This toolbox as a solution aims to protect groundwater quality and balance recharge and release dynamics. Activities are co-developed between at least two pilot areas and jointly evaluated. Pilot areas engage in: (i) analysing groundwater dynamics in relation to pollution and spill-overs, (ii) spatial-environmental participatory analysis, (iii) designing technical measures (NBS/BGI) and planning adaptation pathways, (v) implementing punctual interventions in public spaces, and (vi) embedding Sponge City strategies in planning and policy. The pilots feed into the co-development of the Sponge City Roadmap (WP1). Further upscaling of the toolbox and the knowledge edited in the mutual learning platform will be a central element of trainings in WP3.

Activities

Activity 2.1	
Title	Mutual learning platform for joint toolbox development
Start period	Period 1, 1 - 6
End period	Period 7, 37 - 42
Description [1000 characters]	Our in-person workshops are organized to serve as an interactive communication and learning platform, ensuring alignment between WP1, WP2 and pilots' needs and objectives. ULB and VBX coordinate the organisation of the platform, which leverages on the transdisciplinary approach of the partnership and ensures transnational cooperation. These workshops, each comprising 1-2 days, are organised in the 4 different pilot areas, allowing site visits and to accentuate each pilot's thematic speciality. The first workshop serves to settle a baseline for the solution toolbox in general and pilot analysis, providing inputs for A1.1. and A1.2. The second workshop discusses the methods and tools developed during A2.3 and A2.4 and matches A1.2 to build capacity among partners for developing design and planning/policy instruments. The third workshop explores A1.2 results, A2.5 NBS and it considers opportunities and challenges for participatory engagement of private landowners in A2.8 as well as the podcasts of A2.9. to build capacity for successful implementation. The fourth workshop reflects on the relationship with A1.3 and A 1.4 and evaluates pilot results of A2.6, A2.7 and A2.8. Partners reflect and evaluate how they developed a common Sponge City language and understanding through cooperation.

Deliverables 2.1

Running number	Deliverable title	Description	Delivery period
D.2.1.1	Mutual Learning Platform 1: baseline report	Report on the structure and set-up of the platform as well as on the joint development of a common understanding of the toolbox and a workplan for its development. Establishing an agreement for the tools and technical work programmes of each pilot area, to be implemented in A2.3 and A2.4.	Period 1 , 1 - 6

Deliverables 2.1			
Running number	**Deliverable title**	**Description**	**Delivery period**
D.2.1.2	Mutual Learning Platform 2: analysis and mapping report	Report on joint development of a common understanding of methods and tools developed during A2.3 and A2.4. It informs A1.2, which in its turn builds capacity among partners for the development of design tools and planning and policy instruments.	Period 3 , 13 - 18
D.2.1.3	Mutual Learning Platform 3: design report	Report focussing on the developed design tools and planning/policy instruments in development, discussing opportunities and challenges for stakeholder engagement of public parties and private landowners in A2.8 and linked to A 1.2.	Period 5 , 25 - 30
D.2.1.4	Mutual Learning Platform 4: Reflection and synthesis: planning policy and spatio-physical components	This report summarises a reflection on the relationship with A1.3 and A1.4 and evaluation of pilot results of A2.6, A2.7 and A2.8. It includes PPs' assessment how they developed a common Sponge City understanding through transnational cooperation, thus contributing to trainings of WP3.	Period 6 , 31 - 36

Activity 2.2	
Title	Developing the Toolbox for enabling Sponge City concept in diverse urban settings
Start period	Period 1, 1 - 6
End period	Period 7, 37 - 42

Activity 2.2	
Description [1000 characters]	A2.2 compiles the approaches, methods and tools developed during the pilot implementations into a comprehensive solution, the “Toolbox for Enabling the Sponge City Concept in Diverse Urban Settings”. Closely aligned with the Sponge City Roadmap (A 1.3) this jointly developed toolbox serves as a practical resource to support the wider adoption of sponge city strategies, finally being reinforced by a podcast series and the training modules A 3.4. Coordinated by ULB and VBX, with contributions from all project partners, A2.2 synthesizes lessons learned with the tools applied across the four pilot sites—Brussels, Lens-Liévin, Stuttgart, and Zwolle. The toolbox is designed to guide other regions in replicating and adapting tested approaches, methods and tools applied to issues of (i) groundwater quality and quantity; (ii) design and planning procedures (iii) local socio-spatial conditions and groundwater dynamics focussing on implementation of measures (iv) stakeholder engagement and participatory practices. By collecting these elements, the toolbox provides adaptable solutions for other contexts aiming to replicate the Sponge City concept in other NWE territories.

Deliverables 2.2

Running number	Deliverable title	Description	Delivery period
D.2.2.1	Toolbox structure and outline and chapter 0, introduction	Defining the layout incl. graphic design principles, basic structure and key content envisaged. The introductory part summarises existing knowledge and best practise, provides the methodology and assigns types of tools to pilot cases.	Period 1 , 1 - 6
D.2.2.2	Chapter 1: analysis and mapping tools for social, spatial, environmental and groundwater issues	The first part of the toolbox providing analysis solutions based on pilot cases actions	Period 3 , 13 - 18

Deliverables 2.2			
Running number	**Deliverable title**	**Description**	**Delivery period**
D.2.2.3	Chapter 2: design and planning procedures incl. stakeholder engagement and participatory practices	The second part of the toolbox providing design as well as stakeholder engagement and participatory practises based on pilot cases actions	Period 5 , 25 - 30
D.2.2.4	Chapter 3: Implementing land use policy, technical measures (NBS/BGI) and groundwater management	The third part of the toolbox providing guidance on the implementation of land use and planning policy, socio-spatial-physical aspects related to technical measures incl. groundwater management and prognosis for private and public spaces, based on pilot cases actions.	Period 6 , 31 - 36

Activity 2.3	
Title	Mapping the sponge: quantitative analysis of groundwater related subsurface processes
Start period	Period 1, 1 - 6
End period	Period 4, 19 - 24

Activity 2.3	
Description [1000 characters]	USTUTT and BRGM lead the development and testing of quantitative characterisation and analysis tools, as defined in the first mutual learning platform D2.1.1. Taking account of climate change scenarios, CALL, VBX, LHS and Zwolle perform hydrogeological studies and a quantitative characterisation of their pilot area as a basis for the design (A2.5), planning (A2.6), and implementation (A2.7) of Sponge City concept. BRGM adapts two 3D regional and urban hydrogeological model approaches of the aquifer to simulate groundwater interactions with all kind of (sub)surface infrastructure incl. groundwater inflow into the sewer network. USTUTT performs various kinds of soil tests to assess quantitatively groundwater recharge, detrimental effects on soil /groundwater and the quantification of mobilising effects on existing soil contamination in different climate change scenarios. Jointly BRGM and USTUTT describe the concepts, model approaches, testing and working methods to be used for the construction, validation, and use of spatialized modelling tools to be shared with the other pilots. Both partners mentioned will support the other pilots also with random contributions in their local pilots, resulting in transferable instruments, validated with the pilots and enhancing water management decisions

Deliverables 2.3

Running number	Deliverable title	Description	Delivery period
D.2.3.1	Hydrogeological analysis of pilot areas	Report comprising the hydrogeological characterisation of the pilot areas, comprising groundwater interaction analysis in relation with surface infrastructures and land-uses	Period 2 , 7 - 12
D.2.3.2	Modelling tools for groundwater quantity and quality prognosis	Report comprising guidance on concepts, data, and working methods applied for construction, validation, and use of spatialized modelling tools. Recommendations for design and planning policy based on adaptable model calculations and results.	Period 4 , 19 - 24

Activity 2.4	
Title	Mapping the city: qualitative analysis of spatial, environmental, and participatory aspects

Activity 2.4	
Start period	Period 1, 1 - 6
End period	Period 2, 7 - 12
Description [1000 characters]	A2.4 examines the spatial and environmental conditions of the four pilot areas to identify opportunities for implementing the Sponge City concept. Coordinated by ULB and VBX, with the support of TU Dortmund and Deltares, GIS-based analysis is combined with participatory mapping. Through multi-scalar and participatory mapping, ULB and VBX identify potential urban typologies and locations for the implementation of Sponge City measures (A2.5) and planning pathways (A2.6). The analysis seeks to enhance social inclusion and support biodiversity. GIS mapping (ULB+TU Dortmund) focuses on the relationships between urbanisation patterns, soil types and their water retention or infiltration capacity. It further identifies key land-use characteristics—including public vs private parcels, open vs built-up spaces, and ecological corridors—across the four pilot cities. Complementing this desk-based analysis, ULB organises three co-analysis mapping workshops in Brussels, Zwolle and Stuttgart with local stakeholders and users of the pilot areas. These workshops gather perceptions and situated knowledge from citizens, and stakeholder, fostering solidarity by exploring awareness of groundwater presence and mapping local challenges (e.g. floods, heat islands, droughts, pollution) and opportunities. Synthesised context-specific insights feed into the design (A2.5), planning (A2.6), and implementation (A2.7) of the Sponge City concept.

Deliverables 2.4

Running number	Deliverable title	Description	Delivery period
D.2.4.1	Spatio-environmental analysis of pilot areas	Report on the identification of spatio-environmental conditions, opportunities and challenges, as well as a stakeholder analysis, by visualisation of the production of maps and the assessment of participatory walks and workshops.	Period 2, 7 - 12

Activity 2.5	
Title	Designing Sponge City landscape measures: BGI /NBS Nature-based-Solutions for water cycle management
Start period	Period 2, 7 - 12
End period	Period 4, 19 - 24
Description [1000 characters]	A2.5 designs Sponge City devices, namely Nature-based Solutions (NbS) and Blue-Green Infrastructure for integrated water management. These measures address the full water cycle—precipitation, rainwater runoff, infiltration, evaporation, transpiration, and groundwater retention and release. Coordinated by ULB and BRGM, with contributions from all project partners, A2.5 is grounded in the transdisciplinary exchange of knowledge across pilots. This collaborative approach ensures a wide range of technical options that respond to the diversity of urban environments in the pilot cities, while enhancing the potential for transfer and uptake across other NWE territories. By benchmarking relevant existing projects, ULB with BRGM develop NbS /BGI adapted to the specific conditions of each pilot: the dense urban setting of Brussels, the peri-urban, post- mining landscape of Lens-Liévin, the post-industrial railway area in Stuttgart, and the polder residential neighbourhood of Zwolle. A2.5 explores technical, and landscape dimensions of NbS, prioritising approaches that are: easily replicable in urban environments; supportive of biodiversity and social inclusion; adaptable to varying hydrogeological conditions (A2.3) and spatio-environmental features (A2.4). This drafts the options/scenarios for A2.7 measures to be implemented in Brussels and Lens-Liévin pilots. Two co-design workshops in Brussels and Lens-Liévin will help to overcome silo-thinking and enable the construction of jointly developed designs widely accepted by stakeholders.

Deliverables 2.5			
Running number	**Deliverable title**	**Description**	**Delivery period**

Deliverables 2.5			
Running number	**Deliverable title**	**Description**	**Delivery period**
D.2.5.1	Catalogue of NbS/BGI implementation options, component of toolbox chapter 2	Catalogue comprising the diverse NbS/BGI options, categorised by urban typology, hydrogeological and environmental conditions, material use, type, public/private and corresponding water cycle phase. This narrows down the adaptation options listed in UAST of the Climate-ADAPT platform	Period 3 , 13 - 18
D.2.5.2	Co-design workshops report	Documentation of the two co-design workshops organised by ULB and held in Brussels and Lens-Liévin. Focus on stakeholder engagement and their perspectives and acceptance on jointly developed designs	Period 4 , 19 - 24
D.2.5.3	Design and feasibility of WP2 investments of pilot areas	Report describing the Lens-Liévin and Brussels feasibility and design scenarios regarding the WP2 investments. Both documents fit for use in the permitting processes and tender preparation phase for implementation.	Period 4 , 19 - 24

Activity 2.6	
Title	Planning policy measures: adaptation pathways based on multiple groundwater uses and water sources
Start period	Period 3, 13 - 18
End period	Period 5, 25 - 30

Activity 2.6	
Description [1000 characters]	Zwolle and LHS lead the development of spatial adaptation pathways/strategies in relation to climate change scenarios, aiming to create transferable policy tools and planning recommendations across the pilot areas. Drawing on the hydrogeological characterization from A2.3 and the mapping resulting from A2.4, Zwolle and LHS co-develop urban planning principles and recommendations for both long-term strategic groundwater management and local-scale urban (re) development planning for public and private land [TE1] , this strongly supported by TUDO. LHS focuses on adaptation pathways and spatial recommendations for resilient groundwater recharge management in areas with declining groundwater levels. Zwolle, in parallel, focuses on adaptation pathways and strategic policy planning for closing the water cycle in areas where groundwater is actively drained. Through research-by-design activities for a Water Circular City in Zwolle North, Zwolle and Deltares develop long-term policies for the sharing and maintenance of groundwater. For both pilots BRGM and USTUTT provide feedback on groundwater quantity and quality balances, using the models developed under A2.3 and D2.3.2, and ULB organises two co-design workshops on planning policy procedures ensuring multi-stakeholder communication. These workshops use the Tools and devices designed under A2.5 support LHS's local planning initiatives and Zwolle's research-by-design activities toward creating policy for implementing Water Circular Neighbourhoods.

Deliverables 2.6

Running number	Deliverable title	Description	Delivery period
D.2.6.1	Catalogue of spatial adaptation pathways, component of toolbox chapter 3	Catalogue comprising the policy tools for groundwater management and spatial/planning recommendations, categorised by the hydrogeological and env. conditions, urban typology or development, short/long term, public/private, intervention scale, quantity/quality and corresponding water cycle phase	Period 4 , 19 - 24
D.2.6.2	Co-design workshops report	Documentation of two co-design workshops on planning policy held in Stuttgart and Zwolle, organised by ULB, ensuring multi-stakeholder communication.	Period 5 , 25 - 30

Deliverables 2.6			
Running number	**Deliverable title**	**Description**	**Delivery period**
D.2.6.3	Uptake of adaptation pathways of pilot areas	Report on the research-by-design activities for the adoption of groundwater maintenance policy in Zwolle and the uptake of the spatial recommendations within local urban development plans in Stuttgart.	Period 5 , 25 - 30

Activity 2.7	
Title	Implementation of measures and their assessment: public space and collective facilities
Start period	Period 3, 13 - 18
End period	Period 6, 31 - 36

Activity 2.7	
Description [1000 characters]	A2.7 is led by VBX and CALL and ensures the development of pilot investments through a multi-partner approach, continuously co-evaluating partner contributions such as the NbS designs (A2. 5), adaptation pathways (A2.6), hydrogeological and technical recommendations (A2.3), participatory activity outcomes (A2.4 and A2.5), and insights from spatio-environmental mapping (A2.4). Leveraging on (i) results from co-design workshops (ULB, A2.5), (ii) planning principles (Zwolle, Deltares, A2.6) and (iii) modelling tools and results for recommendations on technical feasibility and localisation (BRGM and USTUTT A2.3), and based on a jointly positive evaluation of final feasibility and design, VBX and CALL lead the development and monitoring—comprising the necessary permitting procedures—of: (i) punctual water cycle interventions in several collective facilities and school courtyards in Brussels, where NbS are adapted t; and (ii) infiltration interventions in public space inCALL, where rainwater will be collected through soil and experimental semi-permeable and filtration materials. BRGM provides modelling for the Lens-Liévin area, of groundwater dynamics and parasitic water flows in the sewer network. Also, BRGM carries out groundwater quantity monitoring in Brussels.USTUTT provides validation of the performance and effects of the infiltration and Zwolle assesses its importance in a holistic water cycle scenario.

Deliverables 2.7

Running number	Deliverable title	Description	Delivery period
D.2.7.1	Preparation documents for realisation	Based on previos work in A 2.5 documents to prepare the realisation, which are e.g. execution designs, tender schedule and documents etc. are provided.	Period 4 , 19 - 24
D.2.7.2	Realisation of WP2 investments	Report on the finalisation of the WP2 investment works and the monitoring actions for groundwater quality and quantity balance.	Period 6 , 31 - 36

Activity 2.8	
Title	Raising awareness on Sponge City Concept to engage citizens and related associations/NGOs
Start period	Period 1, 1 - 6
End period	Period 7, 37 - 42
Description [1000 characters]	A2.8 is a communication activity aimed at raising awareness of the Sponge City concept within the four pilot cities, with a particular focus on engaging citizens and NGOs. It seeks to inspire local stakeholders to become ambassadors for the urban groundwater cycle and volunteers implementing tools developed. A2.8 begins with the development of a framework and schedule for disseminating project activities in pilots, discussed during the mutual learning platform. ULB and VBX provide templates for flyers, posters, and online banners. A2.8 complements and supports the participatory processes in A2.4, A2.5, and A2.7 by synchronising with on-the-ground moments throughout the whole project duration. E.g. in alignment with A2.4, CZ-CS leads a series of Sponge City Walks in Brussels, Stuttgart and Zwolle. Guided visits to key urban sites (e.g. springs) that illustrate the relevance of groundwater quality in urban environments. Complementing A2.5, BRGM organises two school-based workshops (in Brussels and Lens-Liévin) to introduce pupils to groundwater dynamics and the role of NbS in water management. In support of A2.5 and A2.6, VBX and Zwolle coordinate different community visits to existing private gardens featuring integrated rainwater management measures. Such demonstrations shall inspire residents to take action on their own land and stimulate local networks of private actors. Existing incentive programmes for implementing Sponge City elements in Brussels and Stuttgart will be promoted and developed further.

Deliverables 2.8

Running number	Deliverable title	Description	Delivery period

Deliverables 2.8			
Running number	**Deliverable title**	**Description**	**Delivery period**
D.2.8.1	Multi-actor communication manual and base materials for Sponge City Pilots	Collection of guidance, materials outlines and layouts for a harmonised and streamlined implementation of reach out to private citizens and NGOs within the pilots.	Period 2 , 7 - 12
D.2.8.2	Evaluation of incentive programmes	Report describing existing incentive programmes in Brussels and Stuttgart plus others from literature by interviews with responsible cities. Evaluation effects reached and outlining optimisation potentials, thus providing sound recommendation about the application and management of such instruments.	Period 5 , 25 - 30
D.2.8.3	Solidarity activities for Sponge City understanding and private actor engagement	Documentation of reach-out activities in the pilot cities, reflection of stakeholders feedback and assessment of key effects triggered.	Period 7 , 37 - 42

Activity 2.9	
Title	Voices from Sponge Cities - reach out to wider networks
Start period	Period 4, 19 - 24
End period	Period 7, 37 - 42

Activity 2.9	
Description [1000 characters]	A2.9 is a communication activity aimed at expanding the Sponge City concept beyond the pilot sites, engaging other NWE contexts to promote uptake of pilot outcomes, encourage participation, and raise awareness. To support this goal, each pilot city organises a visit to a neighbouring municipality that has already implemented groundwater-related projects. These peer-to-peer site visits strengthen regional networks while also serving as early opportunities to share insights and emerging results from the project. In this context a podcast series titled Voices from Sponge Cities will be developed and coordinated by VBX and ULB. This series built on both the pilot cities and the peer-to-peer site visits captures the perspectives of a wide range of stakeholders—including citizens, civil society organisations, technical experts, researchers, and public officials—who are actively involved in the pilot processes. V Each pilot city contributes two podcast episodes, for a total of eight, offering diverse narratives on local processes, challenges, outcomes, and transferable recommendations. These podcasts are published through municipal and institutional websites, social media platforms, and Spotify, with the aim of inspiring stakeholders in other European regions, thus supporting broader capacity-building and uptake across NWE

Deliverables 2.9

Running number	Deliverable title	Description	Delivery period
D.2.9.1	Screenplay for podcasts - concept, schedule and manual	.....	Period 4 , 19 - 24
D.2.9.2	Collection of 8 podcasts	Materials and conclusions of the peer-to-peer site visits will be summarized in a brief report, accompanying the series of podcast publicly available	Period 7 , 37 - 42

Outputs

Regarding the drop-down list of Programme output indicators:
For every project output you define, you must choose one Programme output indicator to contribute to from the drop-down list and quantify your contribution.
Overall, as a project you must contribute to a minimum of 2 out of the 4 following output indicators.

Important: Please note that if you choose output indicator O.2 then you must also choose output indicator O.3 AND one more output indicator for a total of 3 out of 4 (e.g., O.2, O.3 and O.4).

- O.1: Strategies and action plans jointly developed
- O.2: Pilot actions developed jointly and implemented in projects
- O.3: Jointly developed solutions
- O.4: Participations in joint training schemes

Output 2.1	
Output Title	Pilot actions in 4 cities
Programme Output Indicator	2.4.O.2: Pilot actions developed jointly and implemented in projects
Measurement Unit	pilot actions
Target Value	4,00
Delivery period	Period 6, 31 - 36
Output Description	
Output 2.2	
Output Title	Toolbox for enabling Sponge Cities
Programme Output Indicator	2.4.O.3: Jointly developed solutions
Measurement Unit	solutions
Target Value	1,00
Delivery period	Period 7, 37 - 42
Output Description	the toolbox including ..... and fit for use in other cities is a collective solution developed and tested in the pilots

Investments

Work package 3

Work package title

The RAINBOW Academy - Establish targeted training modules for relevant stakeholder groups involved

Project Specific Objectives

Your objectives should be:

- realistic and achievable by the end of the project;
- specific (who needs project outputs delivered in this work package, and in which territory);
- measurable – indicate the change you are aiming for.

Define one project specific objective that will be achieved when all activities in this work package are implemented and outputs delivered.

From science to practice: To upskill local and regional administrative professionals and the related service providing community (urban planners, civil engineers, decision / policy makers) through targeted training modules on tools and approaches for groundwater resource management.

Think about the communication objective that will contribute to the achievement of the specific objective. Communication objectives aim at changes in a target audience's behaviour, knowledge or belief.

Striving for a wider application and uptake of the strategy and solutions to be developed, communication aims at reaching other cities and the related comprehensive expert and service providing community for building capacity to harmonize spatial development and water management issues. This supports public administration in environmental and spatial development,
to make a paradigm shift happen and keeping urban groundwater resources in balance, well adapting climate changes effects.

Work package summary

The RAINBOW academy is a comprehensive approach tackling various aspects of capacity building. At the core is a transnational modular training developed from the MLP A 2.1, built by 4 modules based on our jointly developed outputs. These modules are:

1. strategy development and action planning
2. spatial planning and development tools
3. mapping, monitoring and prognostic modelling tools
4. NBS /BGI, urban infrastructure

Successful participation will be certified. Specific topics shall be handled at regional level by seminars for technical staff and experts in cooperation with regional training providers. Active participation as speakers and lecturers in national and international conferences is the third pillar in this academy approach.
This WP also includes an awareness and dissemination campaign towards the cities and related technical community around the project outputs, trainings and capacity building measures.

Activities

Activity 3.1	
Title	RAINBOW Communication and awareness campaign
Start period	Period 1, 1 - 6
End period	Period 7, 37 - 42
Description [1000 characters]	LP will jointly with the PPs involved in A1.4, A2.4 and A2.8 prepare a project communication plan, clearly defining objectives, target groups, approach, tools, time plan, monitoring and evaluation against target indicators. Com manager of LP will update and at mid-term review and coordinate website and social media activities. We are striving for increasing the perception and visibility of the objectives of the project and its outputs, increasing the understanding between target groups. Related to capacity building the focus is on announcing events, regional seminars and the training activities ensuring strong public interest and participation. This activity is key to achieve maximum recognition and uptake of project results For ensuring this also after project lifetime key communication partners and multipliers like scientific-technical associations and regional training organisations will be involved in project activities. Jointly long-term recognition and uptake of RAINBOW outputs can be facilitated.

Deliverables 3.1

Running number	Deliverable title	Description	Delivery period
D.3.1.1	WP 3 Communication Plan	Drafted by CM and jointly elaborated, the com plan defines all essential elements required to ensure project recognition. The use of NWE programme communication support tools will be incorporated. The plan defines implementation, responsibilities and adequate monitoring	Period 1 , 1 - 6
D.3.1.2	Review and Update of communication Strategy	Due to the top importance of this communication plan to reach the target groups for the dissemination and training activities, a thorough review and update will be done at project mid-term.	Period 4 , 19 - 24

Deliverables 3.1			
Running number	**Deliverable title**	**Description**	**Delivery period**
D.3.1.3	Campaigning plan for announcing training activities, schedule and materials	A set of targeted measures and related online and paper materials and tools are required. Led by LP, jointly developed and following NWE visual identity guidelines this provides the building blocks both for campaigning in the transnational arena as well as for the partners' regional activities.	Period 4, 19 - 24
D.3.1.4	Communication implementation and monitoring report	Collating all communication related activities this summary report will be the archive of project communication including lessons learned, thus serving as source for after-life communication too.	Period 7, 37 - 42

Activity 3.2	
Title	Preparation of training plan and modules
Start period	Period 3, 13 - 18
End period	Period 5, 25 - 30

Activity 3.2	
Description [1000 characters]	Led by the academic partners and strong involvement of the cities' piloting activities, the partnership will jointly develop a training scheme built on 4 subsequent modules for each a one-day training is envisaged: 1. strategy development and action planning 2. spatial planning and development tools 3. mapping, monitoring and prognostic modelling tools 4. NBS /BGI, urban infrastructure Trainings to be held in the sequence of a few months, each module in another city as a hybrid event, enabling an international audience to participate and ensuring full transnationality. Accordingly training language will be English plus simultaneous translation into the national language of the hosting city. The training plan will clearly define responsibilities, schedule venues and hosts as well as full curriculum and key trainers involved Modular training scheme á 35 certified participants (ca. 7 from each PP city region + few from others) doing at least 3 modules. We expect around 30 more participating in 1-2 modules only, 10 each from urban planning sector, from groundwater management and civil engineering sector.

Deliverables 3.2

Running number	Deliverable title	Description	Delivery period
D.3.2.1	Draft training plan and modules	First outline of the modular training scheme defining the organisational framework, responsibilities and key lecturers involved as well as a first draft curriculum. Key content to be provided by the pilot actions shall be defined.	Period 3 , 13 - 18
D.3.2.2	Final training plan, modules and schedule	Training plan including all relevant information for organisation and PR for the training. Curriculum to be well defined with clear structure and related responsible tutors and lecturers. Outline for the training materials to be provided, minimum requirements for participant certification defined	Period 5 , 25 - 30
D.3.2.3	RAINBOW Training Collection Module 1	Modul 1: Strategy development and action planning led by PP3, PP9 &10. Documentation of agenda, attendance lists, presentations, major conclusions and evaluation by the participants, including participants' intentions for application of the knowledge gained.	Period 6 , 31 - 36

Deliverables 3.2			
Running number	**Deliverable title**	**Description**	**Delivery period**
D.3.2.4	RAINBOW Training Collection Module 2	Modul 2: Spatial Planning and Development Tools, led by P6 and PP8. Documentation of agenda, attendance lists, presentations, major conclusions and evaluation by the participants, including participants' intentions for application of the knowledge gained.	Period 6 , 31 - 36
D.3.2.5	RAINBOW Training Collection Module 3	Module 3: Mappling, Monitoring and Prognostic Modelling Tools, led by PP2 & 4. Documentation of agenda, attendance lists, presentations, major conclusions and evaluation by the participants, including participants' intentions for application of the knowledge gained.	Period 7 , 37 - 42
D.3.2.6	RAINBOW Training Collection Module 4	Module NBS /BGI, urban infrastructure, led by PP8 and PP4. Documentation of agenda, attendance lists, presentations, major conclusions and evaluation by the participants, including participants' intentions for application of the knowledge gained.	Period 7 , 37 - 42

Activity 3.3	
Title	Capacity building by final conference, regional seminars and national + internat. conferences
Start period	Period 5, 25 - 30
End period	Period 7, 37 - 42

Activity 3.3	
Description [1000 characters]	Public final project event in Stuttgart, ca. 125 participants. Most partners are active in scientific-technical associations and water related networks at international (IAH, EWA, EurEau etc.) and national (FH-DGG DWA, etc.) level. Further they cooperate with regional training organisations like e.g. the Training Centre for Contaminated Sites, Soil and Groundwater Baden-Württemberg or the French AQUANOVA (AO5), Adopta and Astee. Project outputs and tools will be channeled to the expert community at conferences and workshops organised by these networks. This dissemination channel will effectively facilitate uptake of project results. A dissemination schedule for mid-term period after project end will be set-up. A specific RAINBOW session (ca. 75 participants) is planned to be integrated into the AquaConSoil 2027 conference, a biennial European premium event for knowledge dissemination and collaboration among scientists, policymakers, decision-makers and industry.

Deliverables 3.3

Running number	Deliverable title	Description	Delivery period
D.3.3.1	Interactive workshop at AquaConSoil international event or similar conference	With such a workshop on a European level conference the project activities and results can be presented to a wider audience, thus promoting the upcoming trainings. Documentation of the Session including programme, presentations and texts for the conference proceedings.	Period 5 , 25 - 30
D.3.3.2	Dissemination Plan for after project end	PPs will collect and coordinate for the near future after project end opportunities and responsibilities for dissemination of outputs and tools, strengthening the uptake and creating a legacy of the project. Also potential follow-up activities and initiatives will be outlined in this report.	Period 6 , 31 - 36
D.3.3.3	Public final project event in Stuttgart	Documentation of final conference including list of participants, presentations, key speakers and their contribution.	Period 7 , 37 - 42

Deliverables 3.3

Running number	Deliverable title	Description	Delivery period
D.3.3.4	Seminars and conference collection	Summary report collating all conference related activities, presentations and summary of audience / key contacts reached. This report will also include a brief assessment of the effectiveness of such activities and lessons learned to strengthen effectiveness in the future.	Period 7 , 37 - 42

Activity 3.4

Title	Transnational trainings on joint project results
Start period	Period 6, 31 - 36
End period	Period 7, 37 - 42
Description [1000 characters]	Transnational trainings will be jointly organised and each module held in another city in cooperation with regional training organisations to present key project results to the public regional & local expert community. These trainings will broaden the scope of pilots as demonstration projects, inspiring other contexts and institutions. Such trainings will follow the modular plan as outlined in A 3.2 and include as main topics e.g. • Key issues in strategy and action planning for climate resilient urban development • Tools and procedures for community participation and landowners motivation in water related issues • Legal and administrative options for public welfare-oriented land-use principles • Modelling and prognosis of subsoil processes related to infiltration and groundwater recharge • Decision support tool for the management of urban water cycles. 1 modular training scheme á 35 certified participants doing all modules. We expect around 50 more participating in 1-2 modules only.

Deliverables 3.4

Running number	Deliverable title	Description	Delivery period

Deliverables 3.4

Running number	Deliverable title	Description	Delivery period
D.3.4.1	RAINBOW Training Collection Modules 1-4	Final report and documentation (agenda, attendance lists, presentations, major conclusions and evaluation by the participants) about the modular sequence of 4 training modules, including participants' intentions for application of the knowledge gained	Period 7 , 37 - 42

Activity 3.5

Title	Capacity building by final conference, regional seminars and national + internat. conferences
Start period	Period 5, 25 - 30
End period	Period 7, 37 - 42
Description [1000 characters]	Public final project event in Stuttgart, ca. 125 participants. As most partners are active in scientific-technical associations and water networks at international (IAH, EWA, EurEau etc.) and national (FH-DGG DWA, etc.) level, project solutions and results will be communicated to the expert community at conferences and workshops organised by these networks. This dissemination channel will effectively facilitate uptake of project results. However quantifying audiences to be reached is difficult. The same applies for seminars organised in cooperation with regional training organisations like e.g. the Training Centre for Contaminated Sites, Soil and Groundwater Baden-Württemberg or the French AQUANOVA (AO5), Adopta and Astee. A specific RAINBOW session (ca. 75 participants) is planned to be integrated into the AquaConSoil 2027 conference, a biennial European premium event for knowledge dissemination and collaboration among scientists, policymakers, decision-makers and industry.

Deliverables 3.5

Running number	Deliverable title	Description	Delivery period

Deliverables 3.5			
Running number	**Deliverable title**	**Description**	**Delivery period**
D.3.5.1	Interactive workshop at AquaConSoil international event or similar conference	With such a workshop on a European level conference the project activities and results can be presented to a wider audience, thus promoting the upcoming trainings. Documentation of the Session including programme, presentations and texts for the conference proceedings.	Period 5 , 25 - 30
D.3.5.2	Seminars and conference collection	Summary report collating all conference related activities, presentations and summary of audience / key contacts reached. Outline for further training activities beyond project lifetime to be organised jointly with national and international scientific-technical and municipal organisations.	Period 7 , 37 - 42

Outputs

Regarding the drop-down list of Programme output indicators:
For every project output you define, you must choose one Programme output indicator to contribute to from the drop-down list and quantify your contribution.
Overall, as a project you must contribute to a minimum of 2 out of the 4 following output indicators.
Important: Please note that if you choose output indicator O.2 then you must also choose output indicator O.3 AND one more output indicator for a total of 3 out of 4 (e.g., O.2, O.3 and O.4).

- O.1: Strategies and action plans jointly developed
- O.2: Pilot actions developed jointly and implemented in projects
- O.3: Jointly developed solutions
- O.4: Participations in joint training schemes

Output 3.1	
Output Title	Training of expert community from regional to transnational level by a modular 4 days training scheme in the partner regions
Programme Output Indicator	2.4.O.4: Participations in joint training schemes
Measurement Unit	participations
Target Value	1,00
Delivery period	Period 7, 37 - 42

Output 3.1	
Output Description	The modular RAINBOW training will be passed by minimum 35 participants coming from cities, public administration and the related service providing community (mostly SMEs). Their certificate of participation specifies the topics handled and skills gained through the training.

Investments

C.5 Project Results

What do you expect to change because of the activities you plan to implement and the outputs you plan to deliver? Please take a look at the programme result indicators and select those that you will contribute to.

Result 1	
Programme result indicator	2.4.R.1: Joint strategies and action plans taken up by organisations
Measurement unit	joint strategy/action plan
Baseline	0,00
Target value	5,00
Delivery period	Period 7, 37 - 42
Describe in more detail the change expected [recommended in Step 1: 500 characters]	The project team will jointly develop a Roadmap for Sponge Cities, which provides a framework for cities across NWE to initiate action planning for deploying sustainable dynamic groundwater resource management and tailored land policy strategies facilitating access to private & public land. Based on the roadmap and in transnational cooperation with the partnership each participating city will set in place during the lifetime of the project an action plan to be fully implemented in the upcoming years, increasing its CC related resilience.

Result 2	
Programme result indicator	2.4.R.2: Solutions taken up or up-scaled by organisations
Measurement unit	solutions
Baseline	0,00
Target value	1,00
Delivery period	Period 7, 37 - 42

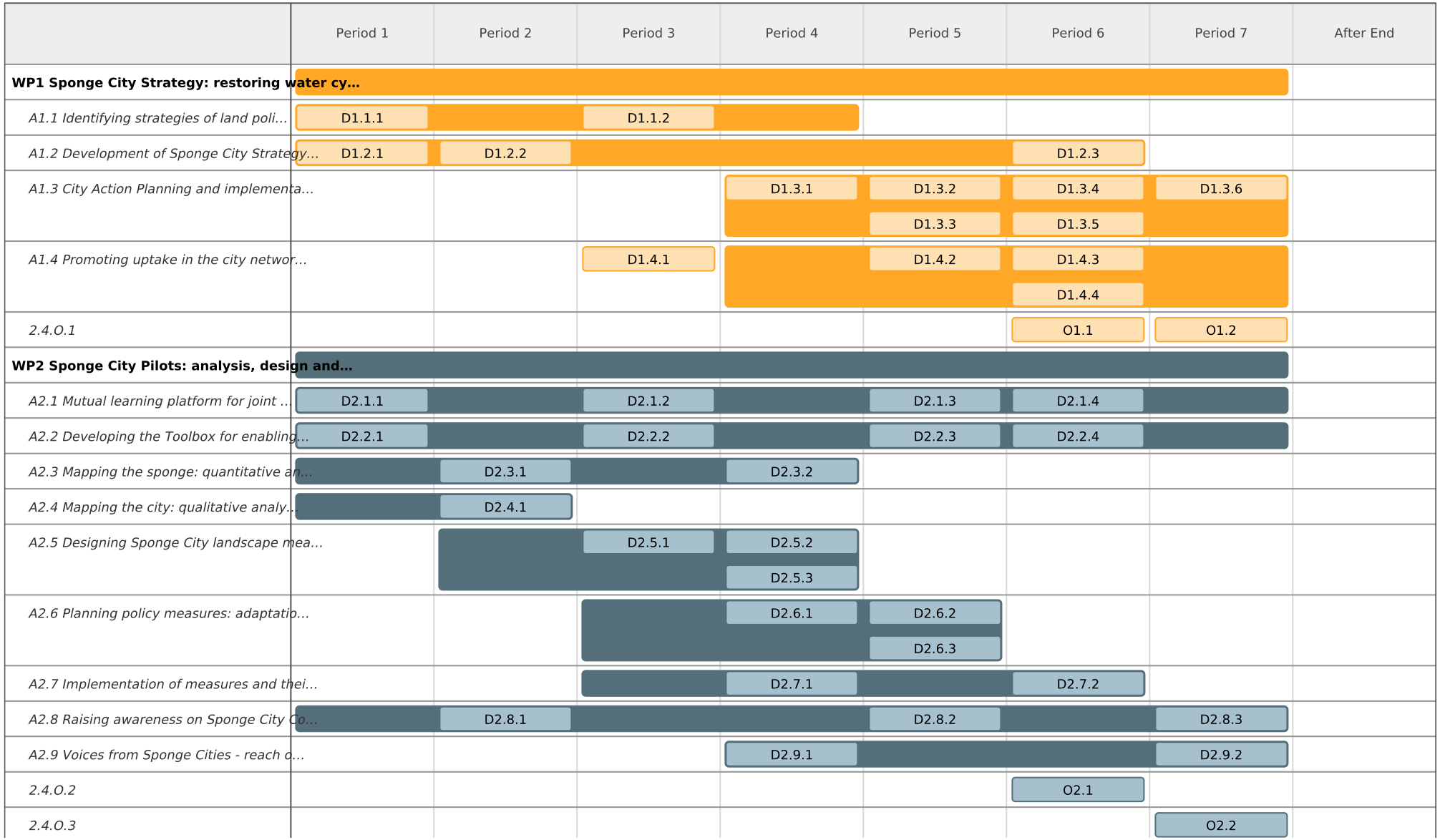
Result 2	
Describe in more detail the change expected [recommended in Step 1: 500 characters]	The solution is jointly developed to enable and up-scale the Sponge City concept in different contexts. It will help cities to tackle technical and analytical issues, implementation barriers as well as stakeholder involvement. The solution draws directly from the pilot experiences, allowing application in different urban settings. We expect uptake by at least 20 organizations around the project partner cities, reached through targeted training modules and twin city workshops.

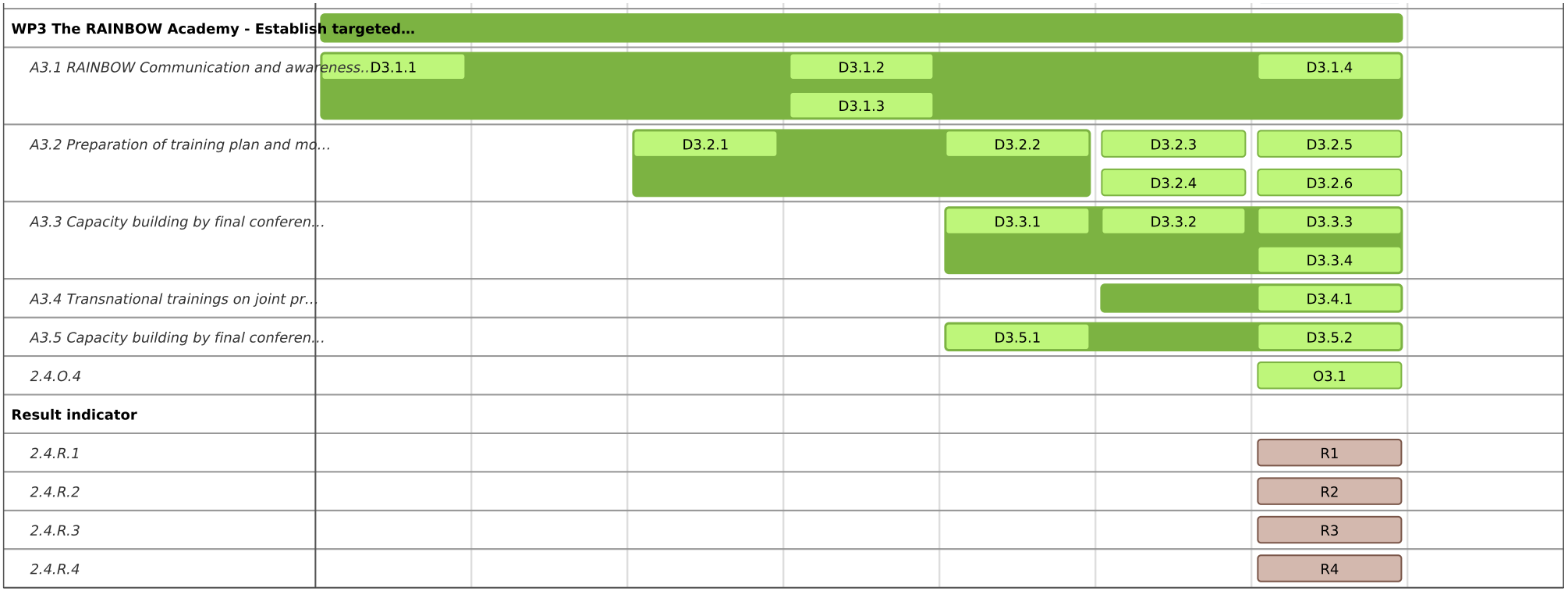
Result 3	
Programme result indicator	2.4.R.3: Completion of joint training schemes
Measurement unit	participants
Baseline	0,00
Target value	35,00
Delivery period	Period 7, 37 - 42
Describe in more detail the change expected [recommended in Step 1: 500 characters]	Having passed the modular RAINBOW training will upskill 35 staff and experts coming from cities, public administration and the related service providing community (mostly SMEs) to apply the knowledge and skills gained through the training in their daily work. Using this qualification in their work facilitates to implement best practise and innovative measures in their cities. Train-the-trainer effects will enable further capacity building supporting the organizations on their way towards climate-resilient sponge cities.

Result 4	
Programme result indicator	2.4.R.4: Organisations with increased institutional capacity due to their participation in cooperation activities across borders
Measurement unit	Organisation
Baseline	0,00
Target value	40,00
Delivery period	Period 7, 37 - 42

Result 4	
Describe in more detail the change expected [recommended in Step 1: 500 characters]	Organisations of the 10 PPs and 7 AOs will promote transnational cooperation, exchange knowledge and experience through active participation, thus enhancing their institutional capacities to manage and restore soil and groundwater in order to reach and maintain the sponge function of urban subsoil as a vital component for urban climate change resilience. Through trainings of estimated 35 persons and twin city cooperation we further expect approx. 20 institutions to significantly benefit and increase their capacities too.

C.6 Project Time Plan




WP3 The RAINBOW Academy - Establish targeted...
A3.1 RAINBOW Communication and awareness...
D3.1.1
D3.1.2
D3.1.4
D3.1.3
A3.2 Preparation of training plan and mo...
D3.2.1
D3.2.2
D3.2.3
D3.2.5
D3.2.4
D3.2.6
A3.3 Capacity building by final conferen...
D3.3.1
D3.3.2
D3.3.3
D3.3.4
A3.4 Transnational trainings on joint pr...
D3.4.1
A3.5 Capacity building by final conferen...
D3.5.1
D3.5.2
2.4.O.4
O3.1
Result indicator
2.4.R.1
R1
2.4.R.2
R2
2.4.R.3
R3
2.4.R.4
R4

C.7 Project management

In addition to the thematic work you will do in your project, you will need time and resources for coordination and internal communication. Please describe below how you plan to organise yourself to ensure the project work runs smoothly.

C.7.1 How will you coordinate your project?

Who will be responsible for coordination? Will you have any other management structures (e.g., thematic groups, WP managers)? How will the internal communication work?

C.7.2 Which measures will you take to ensure quality in your project?

Quality management: How will you ensure project quality (quality control measures)? Risk management: List the three main risks of your project and potential mitigation measures.

C.7.3 What will be the general approach you will follow to communicate about your project?

Who will coordinate project communication and how will he/she ensure the involvement of all partners? How will the communication function contribute to uptake and scale up of your project results? Please note that all communication activities, including a compulsory communication strategy as first deliverable, should be included in the work packages as an integral part of your project. There is no need to repeat this information here.

C.7.4 How do you foresee the financial management of the project and reporting procedures for activities and budget (within the partnership and towards the programme)?

Define responsibilities, deadlines in financial flows, reporting flows, project related transfers, reclaims, etc.

C.7.5 Cooperation criteria

Please select all cooperation criteria that apply to your project and describe how you will fulfil them.

Cooperation criteria	Description
Joint development	No
Joint implementation	No
Joint staffing	No
Joint financing	No

C.7.6 Horizontal principles

Please indicate which type of contribution to horizontal principles applies to the project, and justify your choice.

Horizontal principles	Type of contribution	Description of contribution
Sustainable development		
Equal opportunities and non-discrimination		
Equality between men and women		

C.8 Long-term plans

As a programme, we would like to support projects that have a long-lasting effect in the territory and those who will benefit from them. Please describe below what you will do to ensure this.

C.8.1 Ownership

Please describe who will ensure the financial and institutional support for the outputs/deliverables developed by the project (e.g., tools), and explain how these outputs/deliverables will be integrated in the work of the institutions.

C.8.2 Durability

Some outputs/deliverables should be used by relevant groups (project partners or others) after the project's lifetime, in order to have a lasting effect on the territory and the population. For example, new practices in urban transport need to be used by local authorities to have cleaner air in the city, and the whole population will benefit from this. Please describe how your outputs/deliverables will be used after the project ends and by whom.

D - Project budget

D.1 Project budget per fund

Partner number	Status	Organisation abbreviation	Country (click in cell to access drop-down list)	ERDF	ERDF % Rate	% of total ERDF	Public Contribution	Auto Public Contribution	Private Contribution	Total partner contribution	Total eligible budget	% of Total eligible budget
LP1	Active	LHS	Deutschland (DE)	0,00	0.00	0.00	0,00	0,00	0,00	0,00	0,00	0.00
PP2	Active	USTUTT	Deutschland (DE)	0,00	0.00	0.00	0,00	0,00	0,00	0,00	0,00	0.00
PP3	Active	TUDO	Deutschland (DE)	0,00	0.00	0.00	0,00	0,00	0,00	0,00	0,00	0.00
PP4	Active	BRGM	France (FR)	0,00	0.00	0.00	0,00	0,00	0,00	0,00	0,00	0.00
PP5	Active	CALL	France (FR)	0,00	0.00	0.00	0,00	0,00	0,00	0,00	0,00	0.00
PP6	Active	VBX	Belgique/België (BE)	0,00	0.00	0.00	0,00	0,00	0,00	0,00	0,00	0.00
PP7	Active	CZ-CS	Belgique/België (BE)	0,00	0.00	0.00	0,00	0,00	0,00	0,00	0,00	0.00
PP8	Active	ULB	Belgique/België (BE)	0,00	0.00	0.00	0,00	0,00	0,00	0,00	0,00	0.00
PP9	Active	Zwolle	Nederland (NL)	0,00	0.00	0.00	0,00	0,00	0,00	0,00	0,00	0.00
PP10	Active	Deltares	Nederland (NL)	0,00	0.00	0.00	0,00	0,00	0,00	0,00	0,00	0.00
Total				0,00			0,00	0,00	0,00	0,00	0,00	100.00

D.2 Overview partner / cost category

Partner number	Organisation abbreviation	Country (click in cell to access drop-down list)	Staff cost	Office and administrative costs	Travel and accommodation	External expertise and services	Equipment	Infrastructure and works	Other costs	Lump sum	Total eligible budget
LP1	LHS	Deutschland (DE)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
PP2	USTUTT	Deutschland (DE)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
PP3	TUDO	Deutschland (DE)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
PP4	BRGM	France (FR)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
PP5	CALL	France (FR)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
PP6	VBX	Belgique/België (BE)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
PP7	CZ-CS	Belgique/België (BE)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
PP8	ULB	Belgique/België (BE)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
PP9	Zwolle	Nederland (NL)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
PP10	Deltares	Nederland (NL)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Total			0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00