COMUNE DI GENOVA

DELIBERAZIONE ADOTTATA DALLA GIUNTA COMUNALE
NELLA SEDUTA DEL 09/03/2017

Presiede: Il Sindaco Doria Marco
Assiste: Il Segretario Generale Uguccioni Luca

Al momento della deliberazione risultano presenti (P) ed assenti (A) i Signori:

1	Doria Marco	Sindaco	P
2	Bernini Stefano	ViceSindaco	P
3	Boero Pino	Assessore	P
4	Crivello Giovanni Antonio	Assessore	P
5	Dagnino Anna Maria	Assessore	P
6	Fiorini Elena	Assessore	P
7	Fracassi Emanuela	Assessore	A
8	Lanzone Isabella	Assessore	A
9	Miceli Francesco	Assessore	P
10	Piazza Emanuele	Assessore	A
11	Porcile Italo	Assessore	A
12	Sibilla Carla	Assessore	P

DGC-2017-36 ADESIONE DEL COMUNE DI GENOVA IN QUALITA' DI PARTNER AL PROGETTO EUROPEO "UNaLAB - URBAN NATURE LABS (LABORATORI DI NATURA URBANA)" NELL'AMBITO DEL PROGRAMMA EUROPEO "HORIZON 2020" CALL: SMART AND SUSTAINABLE CITIES -SCC-02-2016-2017: DEMONSTRATING INNOVATIVE NATURE-BASED SOLUTIONS IN CITIES (topic SCC-02-2016-2017 type of action IA)

Su proposta dell'Assessore al Coordinamento dei Progetti Europei e Progetto Genova Smart City Emanuele Piazza di concerto con l'Assessore ai Lavori Pubblici e Manutenzioni Giovanni Crivello e l'Assessore all'Ambiente Italo Porcile

Premesso che:

- il Comune di Genova ha costituito in data 26.11.2010 l'Associazione Genova Smart City con l'obiettivo di costruire un progetto per rendere Genova una città intelligente o "smart";
- è stata individuata nei progetti europei una delle forme di promozione e sostegno per la trasformazione di Genova in una città intelligente, ovvero migliorando la qualità della vita attraverso lo sviluppo economico sostenibile e l'applicazione e diffusione delle tecnologie ICT;
- tali obiettivi rientrano appieno nelle strategie del Comune di Genova ritenendo opportuno predisporre progetti di candidatura della città di Genova a bandi comunitari sulle "Città Intelligenti";

Preso atto che:

- la Commissione Europea ha emanato un bando nell'ambito del programma europeo "Horizon 2020". Call: Smart and Sustainable Cities – SCC-02-2016-2017: Demonstrating Innovative Nature-Based Solutions in Cities (topic SCC-02-2016-2017 type of action IA);
- il Comune di Genova ha partecipato al suddetto bando aderendo al progetto denominato "UNaLAB" (Urban Nature Labs – Laboratori di Natura Urbana);
- il Comune di Genova è partner di un consorzio europeo composto da:
  Teknologian Tutkimuskeskus VTT Oy – Finlandia – Coordinatore, Fraunhofer-Gesellschaft zur Förderung der Angewandten Forschung EV – Germania, Geemente Eindhoven – Olanda, Tampereen Kaupunki – Finlandia, Stavanger Kommune – Norvegia, Ayuntamiento de Castellon de la Plana – Spagna, Mairie de Cannes – Francia, Institut Plánování a Rozvoje Hlavního Města Prahy – Repubblica Ceca, T.C. Başakşehir Belediyesi – Turchia, European Network of Living Labs – Belgio, European Regions Research and Innovation Network – Belgio, Land Milano – Italia, Engineering – Ingegneria Informatica Spa – Italia, M3S Srl – Italia, Ramboll Management Consulting – Finlandia, InnoHub BV – Olanda, P.G. Kuijpers & Zonen B.V. – Olanda, D'Appolonia Spa – Italia, Infrastrutture Recupero Energia Agenzia regionale Ligure – I.R.E. Spa – Italia, Parc Cientific Tecnòlogic i Empresarial de la Universitat Jaume I S.L. – Spagna, Hlavni Mesto Praha – Repubblica Ceca, Technische Universiteit Eindhoven – Olanda, Universidade de Aveiro – Portogallo, Universiteit Stuttgart – Germania, Lulea Tekniska Universitet – Svezia, Ove Arup & Partners Hong Kong Ltd – Hong Kong, Hong Kong Polytechnic University – Hong Kong, Ubatec SA – Argentina.
- Per Genova, che partecipa come città "front runner" insieme alle città di Heindhoven e Tampere, è prevista la realizzazione di un progetto pilota, nel quartiere del Lagaccio, con particolare riguardo alla zona dell'ex Caserma Gavoglio, dove avranno luogo una serie di azioni "nature based" tese ad affrontare i problemi più importanti legati ai cambiamenti climatici ed alla riduzione del rischio idro-geologico;
- Il quartiere del Lagaccio è una zona densamente popolata ed è caratterizzato da una urbanizzazione disordinata avvenuta nel dopoguerra con edifici a più piani e aree dismesse.

Questa zona, come tutto il territorio del Comune di Genova, è a forte rischio idrogeologico e ha seri problemi socio-economici ed ambientali;

- Le azioni previste per il progetto pilota sono la creazione di aree verdi, il rimboschimento, l'aumento delle aree pedonali, il rimodellamento del paesaggio e una serie di soluzioni innovative di gestione delle acque come la fitodepurazione, il sistema di drenaggio dell'acqua, la separazione delle acque reflue; tali azioni richiedono la realizzazione di opere propedeutiche di messa in sicurezza e di demolizione;
- Le soluzioni volte ad aumentare la permeabilità del suolo, nonché a ridurre il fenomeno delle isole di calore urbane, le emissioni di CO2 e l'inquinamento atmosferico provocato dai trasporti urbani avranno un impatto positivo sulla salute e sulla qualità della vita dei residenti;
- L'impegno della città è già stato anche dimostrato da un processo partecipativo, basato sul dialogo, che ha coinvolto i cittadini, le categorie economiche e le associazioni locali ai quali è stato chiesto di prendere parte alla riattivazione del quartiere, alla definizione di una visione generale e di co-investire le risorse verso uno sviluppo urbano sostenibile;
- Il quartiere Lagaccio verrà a costituire una sorta di "laboratorio vivente" dove saranno testate soluzioni di ingegneria naturalistica "nature based", con un approccio multi disciplinare e la partecipazione degli stakeholder e potrà costituire un esempio virtuoso per tutta la città, riproducibile anche a livello regionale, nazionale ed internazionale;

Dato atto che:

- il 6 settembre 2016 scadevano i termini di presentazione del progetto alla Commissione Europea;
- l'Ufficio Strategie Smart City e Progetti Sovranazionali della Direzione Pianificazione Strategica, Smart City, Innovazione d'Impresa e Statistica su indicazione dell'Assessore allo Sviluppo Economico e Coordinamento dei Progetti Europei e Progetto Genova Smart City Emanuele Piazza ha provveduto, di concerto con la Direzione Patrimonio, Demanio e Impiantistica Sportiva, a redigere la documentazione necessaria alla presentazione del progetto preliminare e a inviarlo al Coordinatore del progetto;
- la Commissione Europea ha approvato in data 06/12/2016 il finanziamento del progetto;

Considerato che:

- al Comune di Genova, in quanto responsabile di uno dei progetti pilota, viene riconosciuta una particolare visibilità nazionale ed internazionale, in tema di tecnologie avanzate funzionali alla costruzione della "Smart City";
- la realizzazione del progetto pilota consentirà la sperimentazione e la replicazione di strumenti innovativi "nature based";
- i risultati attesi sia dal progetto pilota in carico a Genova sia da quelli in carico alle altre città ed ai risultati progettuali complessivi sono immediatamente fruibili e assolutamente replicabili e riutilizzabili;

Rilevato che:

- il progetto "UNaLAB" si svilupperà per una durata di 48 mesi;

- il progetto prevede, per il Comune di Genova, un budget complessivo per l'elaborazione e conduzione del "Pilota" pari a € 1.710.250,00 garantiti al 100% dal finanziamento europeo;
- la quota, pari a € 900.000,00, compresa nel budget complessivo di € 1.710.250,00 e relativa alle opere di realizzazione degli spazi verdi e delle aree pedonali previsti dal progetto " Pilota" nell'ambito della ex Caserma Gavoglio, verrà inserita all'interno della Programmazione Triennale dei Lavori Pubblici dell'Ente, mediante una sua variazione, non appena ne verrà definita la progettazione;
- i costi per le opere di messa in sicurezza e di demolizione propedeutiche alla realizzazione del suddetto progetto "Pilota" sono a carico del Comune di Genova e dovranno essere coperti con fondi dedicati, posto che secondo la normativa del programma europeo non risultano eleggibili;
- l'Amministrazione Comunale, peraltro, ha inserito gli interventi di messa in sicurezza idrogeologica e bonifica delle aree dell'ex Caserma Gavoglio, comprensivi anche delle opere propedeutiche di cui sopra, nello schema del Programma Triennale dei Lavori Pubblici 2017-2018-2019, adottato con D.G.C. n. 326 in data 23/12/2016, confermato nel Programma Triennale dei Lavori Pubblici 2017-2018-2019 in corso di approvazione, come da proposta della Giunta al Consiglio n. 5 del 26/01/2017;
- ad avvenuta quantificazione dei costi per tali opere propedeutiche l'Amministrazione Comunale si riserva, nell'ambito del loro specifico inserimento nel Programma Triennale dei Lavori Pubblici, di valutare le forme di finanziamento più idonee, anche ai fini del rispetto della tempistica prevista dal progetto europeo;

Visti:

- il D.lgs 267/2000;
- lo Statuto del Comune di Genova;
- gli allegati pareri in ordine alla regolarità tecnica e contabile del presente provvedimento espressi rispettivamente dal Responsabile del Servizio competente e dal Responsabile di Ragioneria, nonché l'attestazione sottoscritta dal Responsabile del Servizio Finanziario ed il parere di legittimità espresso dal Segretario Generale;

La Giunta, previa regolare votazione, all'unanimità
D E L I B E R A

1) di approvare l'adesione del Comune di Genova in qualità di partner al Progetto "UNa-LAB" (Urban Nature Labs – Laboratori di Natura Urbana) nell'ambito del Programma Europeo "Horizon 2020". Call: Smart and Sustainable Cities – SCC-02-2016-2017: Demonstrating Innovative Nature-Based Solutions in Cities (topic SCC-02-2016-2017 type of action IA), che prevede, per il Comune di Genova, un budget complessivo per l'elaborazione e conduzione del "Pilota" pari a € 1.710.250,00 garantiti al 100% dal finanziamento europeo;

2) di dare atto che la quota, pari a € 900.000,00, compresa nel budget complessivo di € 1.710.250,00 e relativa alle opere di realizzazione degli spazi verdi e delle aree pedonali previsti dal progetto " Pilota" nell'ambito della ex Caserma Gavoglio, verrà inserita

all’interno della Programmazione Triennale dei Lavori Pubblici dell’Ente, mediante una sua variazione, non appena ne verrà definita la progettazione;

3) di dare atto che i costi per le opere di messa in sicurezza e di demolizione propedeutiche alla realizzazione del suddetto progetto “Pilota” sono a carico del Comune di Genova e dovranno essere coperti con fondi dedicati, posto che secondo la normativa del programma europeo non risultano eleggibili;

4) di dare, peraltro, atto che l’Amministrazione Comunale, ha inserito gli interventi di messa in sicurezza idrogeologica e bonifica delle aree dell’ex Caserma Gavoglio, comprensivi anche delle opere propedeutiche di cui sopra, nello schema del Programma Triennale dei Lavori Pubblici 2017-2018-2019, adottato con D.G.C. n. 326 in data 23/12/2016, confermato nel Programma Triennale dei Lavori Pubblici 2017-2018-2019 in corso di approvazione, come da proposta della Giunta al Consiglio n. 5 del 26/01/2017;

5) di dare atto che, ad avvenuta quantificazione dei costi per tali opere propedeutiche, l’Amministrazione Comunale si riserva, nell’ambito del loro specifico inserimento nel Programma Triennale dei Lavori Pubblici, di valutare le forme di finanziamento più idonee, anche ai fini del rispetto della tempistica prevista dal progetto europeo;

6) di demandare alla Direzione Pianificazione Strategica, Smart City, Innovazione d’Impresa e Statistica la predisposizione e l’espletamento delle attività di gestione afferenti funzionalmente agli adempimenti concernenti le attività di management, disseminazione e comunicazione, il supporto tecnico e amministrativo relativamente ai rapporti con la Commissione Europea ed i relativi adempimenti amministrativi e contabili per la quota del progetto di competenza che corrisponde a € 151.250,00;

7) di demandare alla Direzione Patrimonio, Demanio e Impiantistica Sportiva il coordinamento dei conseguenti adempimenti di natura tecnica per l’individuazione del gruppo di lavoro e la conduzione del progetto pilota, anche con il coinvolgimento delle competenze delle diverse strutture dell’Ente per la quota del progetto di competenza che corrisponde a € 1.559.000,00;

8) di dare atto che il presente provvedimento è stato redatto nel rispetto della normativa sulla tutela dei dati personali;

9) di dichiarare la presente deliberazione immediatamente eseguibile a norma dell’art. 134, comma 4, del D.Lgs. 18/08/2000 n. 267.

Attesa l'urgenza di provvedere la Giunta, previa regolare votazione, all'unanimità dichiara immediatamente eseguibile il presente provvedimento ai sensi dell'art. 134 - comma 4 - del T.U. D.Lgs. 18 agosto 2000 n. 267.

Il Sindaco	Il Segretario Generale
Marco Doria	Luca Uguccioni

COMUNE DI GENOVA

CODICE UFFICIO: 163.0.0	**Proposta di Deliberazione n. 2017-DL-63**

OGGETTO: ADESIONE DEL COMUNE DI GENOVA IN QUALITA' DI PARTNER AL PROGETTO EUROPEO "UNaLAB - URBAN NATURE LABS (LABORATORI DI NATURA URBANA)" NELL'AMBITO DEL PROGRAMMA EUROPEO "HORIZON 2020" CALL: SMART AND SUSTAINABLE CITIES -SCC-02-2016-2017: DEMONSTRATING INNOVATIVE NATURE-BASED SOLUTIONS IN CITIES (topic SCC-02-2016-2017 type of action IA)

ELENCO ALLEGATI PARTE INTEGRANTE
- Proposal-SEP-210359907
- Invitation Letter including the information out of ranking

IL DIRETTORE
Dott.ssa G. PESCE

Documento Firmato Digitalmente

Horizon 2020

Call: H2020-SCC-2016-2017
(SMART AND SUSTAINABLE CITIES)

SECOND STAGE

Topic: SCC-02-2016-2017

Type of action: IA
(Innovation action)

Proposal number: 730052-2

Proposal acronym: UNALAB

Deadline Id: H2020-SCC-NBS-2stage-2016

Table of contents

How to fill in the forms

The administrative forms must be filled in for each proposal using the templates available in the submission system. Some data fields in the administrative forms are pre-filled based on the previous steps in the submission wizard.

Proposal ID **730052-2** *Acronym* **UNALAB**

1 - General information

Topic	SCC-02-2016-2017
Call Identifier	H2020-SCC-2016-2017
Type of Action	IA
Deadline Id	H2020-SCC-NBS-2stage-2016

Acronym: UNALAB

Proposal title*: Urban Nature Labs

Note that for technical reasons, the following characters are not accepted in the Proposal Title and will be removed: < > " &

Duration in months: *48*

Fixed keyword 1: *Participatory Innovation* [Add]

Fixed keyword 2: *Urban water management* [Add] [Remove]

Fixed keyword 3: *Public sector innovation* [Add] [Remove]

Fixed keyword 4: *Urbanization and urban planning, cities* [Add] [Remove]

Free keywords: *Co-design, co-creation, innovative financing models, Roadmapping, scenario thinking*

Proposal ID **730052-2** *Acronym* **UNALAB**

Abstract

UNaLab will develop, via co-creation with stakeholders and implementation of 'living lab' demonstration areas, a robust evidence base and European framework of innovative, replicable, and locally-attuned nature-based solutions to enhance the climate and water resilience of cities. UNaLab focuses on urban ecological water management, accompanied with greening measures and innovative and inclusive urban design. The UNaLab partners aim to develop smarter, more inclusive, more resilient and more sustainable local societies through nature based innovation jointly created with and for stakeholders and citizens. UNaLab's 3 front runner cities: Tampere, Eindhoven and Genova, have a track record in smart and citizen driven solutions for sustainable development. They support 7 follower cities: Stavanger, Prague, Castellon, Cannes, Basaksehir, Hong Kong and Buenos Aires plus share experiences with observers as City of Guangzhou and the Brazilian network of Smart Cities. Therefore UNaLab results will impact on different urban socio-economic realities, with diversity in size, challenges and climate conditions. In order to create an EU reference demonstration and go-to-market environment for NBS, UNaLab will use and further develop the ENoLL Urban Living Lab model, and the European Awareness Scenario Workshop method for the co-creation of solutions, and the roadmap approach, in this way achieving an innovative NBS toolbox. Roadmaps will be used in all 10 cities, but in particular serve the follower cities. VTT, with a track record in the field of urban sustainability and Smart Cities, leads UNaLab. The UNaLab consortium is comprised of 29 partners across 12 different European countries and three non-EU countries. The consortium is well-balanced, representing key stakeholders within the value chain of urban challenges and smart, sustainable cities (public bodies, research institutions, large industries, small and medium enterprises.

Remaining characters 49

Has this proposal (or a very similar one) been submitted in the past 2 years in response to a call for proposals under the 7th Framework Programme, Horizon 2020 or any other EU programme(s)? ○ Yes ◉ No

Proposal ID **730052-2** *Acronym* **UNALAB**

Declarations

1) The coordinator declares to have the explicit consent of all applicants on their participation and on the content of this proposal.	☒
2) The information contained in this proposal is correct and complete.	☒
3) This proposal complies with ethical principles (including the highest standards of research integrity — as set out, for instance, in the European Code of Conduct for Research Integrity — and including, in particular, avoiding fabrication, falsification, plagiarism or other research misconduct).	☒

4) The coordinator confirms:

- to have carried out the self-check of the financial capacity of the organisation on http://ec.europa.eu/research/participants/portal/desktop/en/organisations/lfv.html or to be covered by a financial viability check in an EU project for the last closed financial year. Where the result was "weak" or "insufficient", the coordinator confirms being aware of the measures that may be imposed in accordance with the H2020 Grants Manual (Chapter on Financial capacity check); or	○
- is exempt from the financial capacity check being a public body including international organisations, higher or secondary education establishment or a legal entity, whose viability is guaranteed by a Member State or associated country, as defined in the H2020 Grants Manual (Chapter on Financial capacity check); or	◉
- as sole participant in the proposal is exempt from the financial capacity check.	○

5) The coordinator hereby declares that each applicant has confirmed:

- they are fully eligible in accordance with the criteria set out in the specific call for proposals; and	☒
- they have the financial and operational capacity to carry out the proposed action.	☒

The coordinator is only responsible for the correctness of the information relating to his/her own organisation. Each applicant remains responsible for the correctness of the information related to him/her and declared above. Where the proposal to be retained for EU funding, the coordinator and each beneficiary applicant will be required to present a formal declaration in this respect.

According to Article 131 of the Financial Regulation of 25 October 2012 on the financial rules applicable to the general budget of the Union (Official Journal L 298 of 26.10.2012, p. 1) and Article 145 of its Rules of Application (Official Journal L 362, 31.12.2012, p.1) applicants found guilty of misrepresentation may be subject to administrative and financial penalties under certain conditions.

Personal data protection
The assessment of your grant application will involve the collection and processing of personal data (such as your name, address and CV), which will be performed pursuant to Regulation (EC) No 45/2001 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data. Unless indicated otherwise, your replies to the questions in this form and any personal data requested are required to assess your grant application in accordance with the specifications of the call for proposals and will be processed solely for that purpose. Details concerning the purposes and means of the processing of your personal data as well as information on how to exercise your rights are available in the privacy statement. Applicants may lodge a complaint about the processing of their personal data with the European Data Protection Supervisor at any time.

Your personal data may be registered in the Early Detection and Exclusion system of the European Commission (EDES), the new system established by the Commission to reinforce the protection of the Union's financial interests and to ensure sound financial management, in accordance with the provisions of articles 105a and 108 of the revised EU Financial Regulation (FR) (Regulation (EU, EURATOM) 2015/1929 of the European Parliament and of the Council of 28 October 2015 amending Regulation (EU, EURATOM) No 966/2012) and articles 143 - 144 of the corresponding Rules of Application (RAP) (COMMISSION DELEGATED REGULATION (EU) 2015/2462 of 30 October 2015 amending Delegated Regulation (EU) No 1268/2012) for more information see the Privacy statement for the EDES Database).

Proposal ID **730052-2** *Acronym* **UNALAB**

List of participants

#	Participant Legal Name	Country
1	Teknologian tutkimuskeskus VTT Oy	Finland
2	FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V.	Germany
3	GEMEENTE EINDHOVEN	Netherlands
4	COMUNE DI GENOVA	Italy
5	TAMPEREEN KAUPUNKI	Finland
6	Stavanger kommune	Norway
7	AYUNTAMIENTO DE CASTELLON DE LA PLANA	Spain
8	MAIRIE DE CANNES	France
9	INSTITUT PLANOVANI A ROZVOJE HLAVNIHO MESTA PRAHY	Czech Republic
10	T.C. Başakşehir Belediyesi	Turkey
11	EUROPEAN NETWORK OF LIVING LABS	Belgium
12	European Regions Research and Innovation Network	Belgium
13	LAND Milano	Italy
14	ENGINEERING - INGEGNERIA INFORMATICA SPA	Italy
15	M3S SRL	Italy
16	RAMBOLL MANAGEMENT CONSULTING	Finland
17	InnoHub BV	Netherlands
18	P.G.Kuijpers & Zonen B.V.	Netherlands
19	D'APPOLONIA SPA	Italy
20	INFRASTRUTTURE RECUPERO ENERGIA AGENZIA REGIONALE LIGURE - I.R.E. SPA	Italy
21	Parc Cientific Tecnologic i empresarial de la Universitat Jaume I, S.L.	Spain

Proposal ID **730052-2** *Acronym* **UNALAB**

#	Participant Legal Name	Country
22	hlavní město Praha	Czech Republic
23	TECHNISCHE UNIVERSITEIT EINDHOVEN	Netherlands
24	UNIVERSIDADE DE AVEIRO	Portugal
25	UNIVERSITAET STUTTGART	Germany
26	LULEA TEKNISKA UNIVERSITET	Sweden
27	OVE ARUP & PARTNERS HONG KONG LTD	Hong Kong
28	Hong Kong Polytechnic University	Hong Kong
29	UBATEC SA	Argentina

2 - Administrative data of participating organisations

PIC	***Legal name***
932760440	*Teknologian tutkimuskeskus VTT Oy*

Short name: VTT

Address of the organisation

Street VUORIMIEHENTIE 3

Town Espoo

Postcode 02150

Country Finland

Webpage www.vtt.fi

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... no
Non-profit ..... yes
International organisation ..... no
International organisation of European interest ..... no
Secondary or Higher education establishment ..... no
Research organisation ..... yes
Legal person ..... yes

Enterprise Data

SME self-declared status ..... unknown
SME self-assessment ..... unknown
SME validation sme ..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: 7210 - Research and experimental development on natural sciences and engineering

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **VTT**

Department(s) carrying out the proposed work

Department 1

Department name: Smart industry and energy systems ☐ not applicable

☒ Same as organisation address

Street: VUORIMIEHENTIE 3

Town: Espoo

Postcode: 02150

Country: Finland

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **VTT**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Prof. Sex: ○ Male ◉ Female

First name **Miimu** Last name **Airaksinen**

E-Mail **miimu.airaksinen@vtt.fi**

Position in org.: Research Professor

Department: Smart industry and energy systems ☐ Same as organisation

☒ Same as organisation address

Street: VUORIMIEHENTIE 3

Town: Espoo Post code: 02150

Country: Finland

Website: www.vttresearch.com

Phone 1: +358407704832 Phone 2: +xxx xxxxxxxxx Fax: +xxx xxxxxxxxx

Other contact persons

First Name	***Last Name***	***E-mail***	***Phone***
Irina	Granfors	irina.granfors@vtt.fi	+358503058009
Isabel	Pinto Seppä	isabel.pinto-seppa@vtt.fi	+358405935181
Laura	Wendling	laura.wendling@vtt.fi	+358401458036

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **FHG**

PIC	***Legal name***
999984059	*FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V.*

Short name: FHG

Address of the organisation

Street HANSASTRASSE 27C

Town MUNCHEN

Postcode 80686

Country Germany

Webpage www.fraunhofer.de

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... no

Non-profit ..... yes

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... yes

Legal person ..... yes

Enterprise Data

SME self-declared status ..... 2007 - no

SME self-assessment ..... unknown

SME validation sme ..... 2007 - no

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: 721 - Research and experimental development on natural sciences and engineering

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **FHG**

Department(s) carrying out the proposed work

Department 1

Department name: Fraunhofer Institute for Industrial Engineering IAO ☐ not applicable

☐ Same as organisation address

Street: Nobelstrasse 12

Town: Stuttgart

Postcode: 70569

Country: Germany

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **FHG**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr. Sex: (•) Male ( ) Female

First name: **Alanus** Last name: **VON RADECKI**

E-Mail: **alanus.radecki@iao.fraunhofer.de**

Position in org.: Head of Competence Team Urban Governance Innovation

Department: Urban Governance Innovation ☐ Same as organisation

☐ Same as organisation address

Street: Nobelstr. 12

Town: Stuttgart Post code: 70569

Country: Germany

Website: www.iao.fraunhofer.de

Phone 1: 00497119702169 Phone 2: +xxx xxxxxxxxx Fax: +xxx xxxxxxxxx

Other contact persons

First Name	***Last Name***	***E-mail***	***Phone***
Thomas	Adolph	036-controller@iao.fraunhofer.de	+49 711 9702028
Damian	Wagner	damian.wagner@iao.fraunhofer.de	+491522883526
Elena	Krylova	elena.krylova@iao.fraunhofer.de	+4907119702174

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **EIN**

PIC	***Legal name***
993619889	*GEMEENTE EINDHOVEN*

Short name: EIN

Address of the organisation

Street STADHUISPLEIN 10

Town EINDHOVEN

Postcode 5600 RB

Country Netherlands

Webpage

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... yes

Non-profit ..... yes

International organisation ..... unknown

International organisation of European interest ..... unknown

Secondary or Higher education establishment ..... no

Research organisation ..... no

Legal person ..... yes

Enterprise Data

SME self-declared status ..... unknown

SME self-assessment ..... unknown

SME validation sme ..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: L - Real estate activities

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **EIN**

Department(s) carrying out the proposed work

Department 1

Department name: Ruimtelijk Domein ☐ not applicable

☐ Same as organisation address

Street: Nachtegaallaan 15

Town: Eindhoven

Postcode: 5613CM

Country: Netherlands

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **EIN**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr. Sex: (•) Male ( ) Female

First name **frank** Last name **van Swol**

E-Mail **f.van.swol@eindhoven.nl**

Position in org.: Head of Sector

Department: Ruimtelijk Domein ☐ Same as organisation

☐ Same as organisation address

Street: Nachtegaallaan 15

Town: Eindhoven Post code: 5613CM

Country: Netherlands

Website: www.eindhoven.nl

Phone 1: 0031402386126 Phone 2: +xxx xxxxxxxxx Fax: +xxx xxxxxxxxx

Other contact persons

First Name	***Last Name***	***E-mail***	***Phone***
Bernadette	Bergsma	b.bergsma@eindhoven.nl	003227377220
Delia	Mitcan	d.mitcan@eindhoven.nl	0031627821560
Anthony	van de ven	anthony.vd.ven@eindhoven.nl	003227377223
Robert	Elbrink	r.elbrink@eindhoven.nl	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **GEN**

PIC	***Legal name***
998295095	*COMUNE DI GENOVA*

Short name: GEN

Address of the organisation

Street VIA GARIBALDI 9

Town GENOVA

Postcode 16124

Country Italy

Webpage www.comune.genova.it

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... yes

Non-profit ..... yes

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Legal person ..... yes

Enterprise Data

SME self-declared status ..... unknown

SME self-assessment ..... unknown

SME validation sme ..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: L - Real estate activities

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **GEN**

Department(s) carrying out the proposed work

Department 1

Department name: Direzione Patrimonio Demanio e Impiantistica Sportiva ☐ not applicable

☐ Same as organisation address

Street: Via di Francia 1

Town: Genova

Postcode: 16149

Country: Italy

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **GEN**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr. Sex: (•) Male ( ) Female

First name: **Paolo** Last name: **Castiglieri**

E-Mail: **pcastiglieri@comune.genova.it**

Position in org.: Head of Smart City Strategies and European Projects Office

Department: Dir. Pianif. Strategica, Smart City, Innov. d'Impresa Statistica ☐ Same as organisation

☒ Same as organisation address

Street: VIA GARIBALDI 9

Town: GENOVA Post code: 16124

Country: Italy

Website: www.comune.genova.it

Phone 1: 390105572816 Phone 2: 393351444737 Fax: 390105572925

Other contact persons

First Name	*Last Name*	*E-mail*	*Phone*
Anna Jole	Corsi	acorsi@comune.genova.it	390105577422
Sonia	Zarino	szarino@comune.genova.it	390105577436

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **TRE**

PIC	***Legal name***
998829080	*TAMPEREEN KAUPUNKI*

Short name: TRE

Address of the organisation

Street ALEKSIS KIVEN KATU 14-16

Town TAMPERE

Postcode 33100

Country Finland

Webpage www.tampere.fi

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... yes

Non-profit ..... yes

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Legal person ..... yes

Enterprise Data

SME self-declared status ..... unknown

SME self-assessment ..... unknown

SME validation sme ..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: -

Department(s) carrying out the proposed work

Department 1

Department name: Vuores project - Civil Engineering ☐ not applicable

☒ Same as organisation address

Street: ALEKSIS KIVEN KATU 14-16

Town: TAMPERE

Postcode: 33100

Country: Finland

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **TRE**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mrs Sex: ○ Male ◉ Female

First name **Kirsti** Last name **Toivonen**

E-Mail **kirsti.o.toivonen@tampere.fi**

Position in org.: Project manager

Department: Vuores project - Civil engineering ☐ Same as organisation

☒ Same as organisation address

Street: ALEKSIS KIVEN KATU 14-16

Town: TAMPERE Post code: 33100

Country: Finland

Website: www.tampere.fi

Phone 1: +358 3 565 611 Phone 2: *+xxx xxxxxxxxx* Fax: *+xxx xxxxxxxxx*

Other contact persons

First Name	***Last Name***	***E-mail***	***Phone***
Suvi	Holm	suvi.holm@tampere.fi	
Reijo	Valiharju	reijo.valiharju@tampere.fi	
Petra	Kortelainen	petra.kortelainen@tampere.fi	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **STA**

PIC	***Legal name***
994034079	*Stavanger kommune*

Short name: STA

Address of the organisation

Street Olav Kyrresgate 23

Town Stavanger

Postcode 4068

Country Norway

Webpage www.stavanger.kommune.no

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... yes
Non-profit ..... yes
International organisation ..... no
International organisation of European interest ..... no
Secondary or Higher education establishment ..... no
Research organisation ..... no

Legal person ..... yes

Enterprise Data

SME self-declared status ..... 2010 - no
SME self-assessment ..... unknown
SME validation sme ..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: L - Real estate activities

Department(s) carrying out the proposed work

Department 1

Department name: Department for Environment and urban development ☐ not applicable

☒ Same as organisation address

Street: Olav Kyrresgate 23

Town: Stavanger

Postcode: 4068

Country: Norway

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **STA**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mrs Sex: ○ Male ◉ Female

First name: **Ellen** Last name: **Valand Mauritzen**

E-Mail: **ellen.mauritzen@stavanger.kommune.no**

Position in org.: Special Adviser International Affairs

Department: Department for Environment and urban development ☐ Same as organisation

☒ Same as organisation address

Street: Olav Kyrresgate 23

Town: Stavanger Post code: 4068

Country: Norway

Website: www.stavanger.kommune.no

Phone 1: +4790527539 Phone 2: +xxx xxxxxxxxx Fax: +xxx xxxxxxxxx

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **CAS**

PIC	***Legal name***
971672184	*AYUNTAMIENTO DE CASTELLON DE LA PLANA*

Short name: CAS

Address of the organisation

Street PLAZA MAYOR 1

Town CASTELLON DE LA PLANA

Postcode 1201

Country Spain

Webpage www.castello.es

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... yes

Non-profit ..... yes

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Legal person ..... yes

Enterprise Data

SME self-declared status ..... unknown

SME self-assessment ..... unknown

SME validation sme ..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: L - Real estate activities

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **CAS**

Department(s) carrying out the proposed work

Department 1

Department name: Engineering dpt. ☐ not applicable

☐ Same as organisation address

Street: Emmedio street 82

Town: Castellon

Postcode: 12001

Country: Spain

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **CAS**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr. Sex: (•) Male ( ) Female

First name: **Luis** Last name: **Gargori Reverter**

E-Mail: **luis.gargori@castello.es**

Position in org.: Responsible for European Projects

Department: Engineering dpt. [ ] Same as organisation

[ ] Same as organisation address

Street: Emmedio str 82

Town: Castellon Post code: 12001

Country: Spain

Website: www.castello.es

Phone 1: Phone 2: +xxx xxxxxxxxx Fax: +xxx xxxxxxxxx

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **CAN**

PIC	***Legal name***
920259080	*MAIRIE DE CANNES*

Short name: CAN

Address of the organisation

Street 1 place Bernard Cornut-Gentille

Town CANNES

Postcode 06414

Country France

Webpage http://www.cannes.com

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... yes

Non-profit ..... yes

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Legal person ..... yes

Enterprise Data

SME self-declared status ..... unknown

SME self-assessment ..... unknown

SME validation sme ..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: -

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **CAN**

Department(s) carrying out the proposed work

Department 1

Department name: Technical Services ☐ not applicable

☒ Same as organisation address

Street: 1 place Bernard Cornut-Gentille

Town: CANNES

Postcode: 06414

Country: France

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **CAN**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr. Sex: (•) Male ( ) Female

First name **Thomas** Last name **Onzon**

E-Mail **thomas.onzon@ville-cannes.fr**

Position in org.: General Manager of Technical Services

Department: Technical Services ☐ Same as organisation

☒ Same as organisation address

Street: 1 place Bernard Cornut-Gentille

Town: CANNES Post code: 06414

Country: France

Website: www.cannes.com

Phone 1: +33 497064116 Phone 2: +33 618620122 Fax: *+xxx xxxxxxxxx*

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **IPR**

PIC	***Legal name***
997431989	*INSTITUT PLANOVANI A ROZVOJE HLAVNIHO MESTA PRAHY*

Short name: IPR

Address of the organisation

Street VYSEHRADSKA 57/2077

Town PRAHA

Postcode 128 00

Country Czech Republic

Webpage http://www.iprpraha.cz/

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... yes

Non-profit ..... yes

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Legal person ..... yes

Enterprise Data

SME self-declared status ..... unknown

SME self-assessment ..... unknown

SME validation sme ..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: 74 - Other professional, scientific and technical activities

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **IPR**

Department(s) carrying out the proposed work

Department 1

Department name: Strategy and Policy Section ☐ not applicable

☒ Same as organisation address

Street: VYSEHRADSKA 57/2077

Town: PRAHA

Postcode: 128 00

Country: Czech Republic

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **IPR**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr. Sex: (•) Male ( ) Female

First name **adam** Last name **pajgrt**

E-Mail **pajgrt@ipr.praha.eu**

Position in org.: Strategy and development specialist

Department: INSTITUT PLANOVANI A ROZVOJE HLAVNIHO MESTA PRAHY ☒ Same as organisation

☒ Same as organisation address

Street: VYSEHRADSKA 57/2077

Town: PRAHA Post code: 128 00

Country: Czech Republic

Website: http://www.iprpraha.cz/

Phone 1: +xxx xxxxxxxxx Phone 2: +xxx xxxxxxxxx Fax: +xxx xxxxxxxxx

Other contact persons

First Name	*Last Name*	*E-mail*	*Phone*
ivan	duskov	duskov@ipr.praha.eu	+420602372713
petr	hacacek	hlavacek@ipr.praha.eu	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **BAS**

PIC	***Legal name***
953546279	*T.C. Başakşehir Belediyesi*

Short name: BAS

Address of the organisation

Street Basak Mah. 5.Etap 1.Kisim Aksemsettin Cad. N

Town Istanbul

Postcode 34480

Country Turkey

Webpage www.basaksehir.bel.tr

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... yes

Non-profit ..... yes

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Legal person ..... yes

Enterprise Data

SME self-declared status ..... unknown

SME self-assessment ..... unknown

SME validation sme ..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: L - Real estate activities

Department(s) carrying out the proposed work

Department 1

Department name: IT Department ☐ not applicable

☒ Same as organisation address

Street: Basak Mah. 5.Etap 1.Kisim Aksemsettin Ca

Town: Istanbul

Postcode: 34480

Country: Turkey

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **BAS**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr. Sex: (•) Male ( ) Female

First name: **Bekir** Last name: **Sulcuk Temel**

E-Mail: **can.tuncsav@basaksehir-livinglab.com**

Position in org.: IT manager

Department: IT department ☐ Same as organisation

☒ Same as organisation address

Street: Basak Mah. 5.Etap 1.Kisim Aksemsettin Cad. No:3 Basaksehir

Town: Istanbul Post code: 34480

Country: Turkey

Website: www.basaksehir.bel.tr

Phone 1: Phone 2: +xxx xxxxxxxxx Fax: +xxx xxxxxxxxx

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **ENoLL**

PIC	***Legal name***
984556306	*EUROPEAN NETWORK OF LIVING LABS*

Short name: ENoLL

Address of the organisation

Street PLEINLAAN 9

Town BRUSSEL

Postcode 1050

Country Belgium

Webpage http://www.openlivinglabs.eu

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... no

Legal person ..... yes

Non-profit ..... yes

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Enterprise Data

SME self-declared status..... unknown

SME self-assessment ..... unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: 93 - Sports activities and amusement and recreation activities

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **ENoLL**

Department(s) carrying out the proposed work

Department 1

Department name: Secretariat ☐ not applicable

☒ Same as organisation address

Street: PLEINLAAN 9

Town: BRUSSEL

Postcode: 1050

Country: Belgium

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **ENoLL**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Ms Sex: ○ Male ◉ Female

First name: **Ana** Last name: **Garcia**

E-Mail: **projects@enoll.org**

Position in org.: Director

Department: Secretariat ☐ Same as organisation

☒ Same as organisation address

Street: PLEINLAAN 9

Town: BRUSSEL Post code: 1050

Country: Belgium

Website: http://www.openlivinglabs.eu

Phone 1: Phone 2: +xxx xxxxxxxxx Fax: +xxx xxxxxxxxx

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **ERRIN**

PIC	***Legal name***
997382713	*European Regions Research and Innovation Network*

Short name: ERRIN

Address of the organisation

Street RUE DE LUXEMBOURG 3

Town Brussels

Postcode 1000

Country Belgium

Webpage www.errin.eu

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... no

Non-profit ..... yes

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Legal person ..... yes

Enterprise Data

SME self-declared status..... unknown

SME self-assessment ..... unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: 93 - Sports activities and amusement and recreation activities

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **ERRIN**

Department(s) carrying out the proposed work

Department 1

Department name: Smart industry and energy systems ☐ not applicable

☒ Same as organisation address

Street: RUE DE LUXEMBOURG 3

Town: Brussels

Postcode: 1000

Country: Belgium

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **ERRIN**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr. Sex: (•) Male ( ) Female

First name: **Ryan** Last name: **Titley**

E-Mail: **communication@errin.eu**

Position in org.: Project Officer

Department: Secretariat ☐ Same as organisation

☒ Same as organisation address

Street: RUE DE LUXEMBOURG 3

Town: Brussels Post code: 1000

Country: Belgium

Website: www.errin.eu

Phone 1: Phone 2: +xxx xxxxxxxxx Fax: +xxx xxxxxxxxx

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **LAN**

PIC	***Legal name***
920200589	*LAND Milano*

Short name: LAN

Address of the organisation

Street via Varese 16

Town Milan

Postcode 20121

Country Italy

Webpage www.landsrl.com

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... no

Non-profit ..... no

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Legal person ..... yes

Enterprise Data

SME self-declared status..... unknown

SME self-assessment ..... unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: -

Department(s) carrying out the proposed work

No department involved

Department name ☒ not applicable

☐ Same as organisation address

Street *Please enter street name and number.*

Town

Postcode

Country

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **LAN**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mrs

Sex: ○ Male ◉ Female

First name: **Letizia**

Last name: **Corino**

E-Mail: **gare@landsrl.com**

Position in org.: Project manager / tender and competition

Department: LAND Milano

☒ Same as organisation

☒ Same as organisation address

Street: via Varese 16

Town: Milan

Post code: 20121

Country: Italy

Website: www.landsrl.com

Phone 1:

Phone 2: +xxx xxxxxxxxx

Fax: +xxx xxxxxxxxx

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **ENG**

PIC	***Legal name***
999960488	*ENGINEERING - INGEGNERIA INFORMATICA SPA*

Short name: ENG

Address of the organisation

Street Via San Martino Della Battaglia 56

Town ROMA

Postcode 00185

Country Italy

Webpage www.eng.it

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... no

Non-profit ..... no

International organisation ..... unknown

International organisation of European interest ..... unknown

Secondary or Higher education establishment ..... no

Research organisation ..... no

Legal person ..... yes

Enterprise Data

SME self-declared status ..... 2013 - no

SME self-assessment ..... 2014 - no

SME validation sme ..... 2013 - no

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: 72 - Scientific research and development

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **ENG**

Department(s) carrying out the proposed work

Department 1

Department name: R&D Laboratory ☐ not applicable

☐ Same as organisation address

Street: Viale Regione Siciliana 7572

Town: Palermo

Postcode: 90146

Country: Italy

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **ENG**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr. Sex: (•) Male ( ) Female

First name **Giovanni** Last name **Aiello**

E-Mail **giovanni.aiello@eng.it**

Position in org.: Head of Public Sector Innovation Group

Department: R&D Laboratory ☐ Same as organisation

☐ Same as organisation address

Street: Viale Regione Siciliana 7275

Town: Palermo Post code: 90146

Country: Italy

Website: www.eng.it

Phone 1: +393454751265 Phone 2: +390917511736 Fax: +390917511720

Other contact persons

First Name	***Last Name***	***E-mail***	***Phone***
Roberto	Di Bernardo	roberto.dibernardo@eng.it	+393276846907
Marco	Alessi	marco.alessi@eng.it	+393492522309

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **M3S**

PIC	***Legal name***
996232972	*M3S SRL*

Short name: M3S

Address of the organisation

Street VIA MOLO UMBERTO CAGNI

Town GENOVA

Postcode 16126

Country Italy

Webpage www.m3s.it

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... no

Non-profit ..... no

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Legal person ..... yes

Enterprise Data

SME self-declared status..... unknown

SME self-assessment ..... unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is an SME (small- and medium-sized enterprise) for the call.

NACE Code: 72 - Scientific research and development

Department(s) carrying out the proposed work

No department involved

Department name ☒ not applicable

☐ Same as organisation address

Street *Please enter street name and number.*

Town

Postcode

Country

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **M3S**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr. Sex: (•) Male ( ) Female

First name **Pierpaolo** Last name **Baglietto**

E-Mail **p.baglietto@m3s.it**

Position in org.: Research officer

Department: M3S SRL ☒ Same as organisation

☒ Same as organisation address

Street: VIA MOLO UMBERTO CAGNI

Town: GENOVA Post code: 16126

Country: Italy

Website: www.m3s.it

Phone 1: 01009850000 Phone 2: +xxx xxxxxxxxx Fax: +xxx xxxxxxxxx

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **RAM**

PIC	***Legal name***
959120481	*RAMBOLL MANAGEMENT CONSULTING*

Short name: RAM

Address of the organisation

Street MIKONKATU 3 RD FLOOR 15 A

Town HELSINKI

Postcode 00100

Country Finland

Webpage http://www.ramboll-management.fi/

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... no

Non-profit ..... no

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Legal person ..... yes

Enterprise Data

SME self-declared status ..... 2011 - no

SME self-assessment ..... unknown

SME validation sme ..... 2011 - no

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: 93 - Sports activities and amusement and recreation activities

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **RAM**

Department(s) carrying out the proposed work

Department 1

Department name: Management Consulting ☐ not applicable

☐ Same as organisation address

Street: Säterinkatu 6

Town: Espoo

Postcode: 02601

Country: Finland

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **RAM**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr. Sex: (•) Male ( ) Female

First name **Henri** Last name **Lahtinen**

E-Mail **henri.lahtinen@ramboll.com**

Position in org.: Senior Consultant

Department: Management Consulting ☐ Same as organisation

☐ Same as organisation address

Street: Pakkahuoneenaukio 2

Town: Tampere Post code: 33101

Country: Finland

Website: www.ramboll.fi/johdon-konsultointi

Phone 1: +358407796975 Phone 2: +xxx xxxxxxxxx Fax: +xxx xxxxxxxxx

Other contact persons

First Name	*Last Name*	*E-mail*	*Phone*
Kalle	Lamminmaki	kalle.lamminmaki@ramboll.com	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **INN**

PIC	***Legal name***
936858593	*InnoHub BV*

Short name: INN

Address of the organisation

Street Musschenbroekstraat 19

Town Eindhoven

Postcode 5621 EA

Country Netherlands

Webpage Www.openremote.com

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... no

Non-profit ..... no

International organisation ..... yes

International organisation of European interest ..... yes

Secondary or Higher education establishment ..... no

Research organisation ..... no

Legal person ..... yes

Enterprise Data

SME self-declared status ..... 2012 - yes

SME self-assessment ..... unknown

SME validation sme ..... unknown

Based on the above details of the Beneficiary Registry the organisation is an SME (small- and medium-sized enterprise) for the call.

NACE Code: 620 - Computer programming, consultancy and related activities

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **INN**

Department(s) carrying out the proposed work

Department 1

Department name: R&D team ☐ not applicable

☒ Same as organisation address

Street: Musschenbroekstraat 19

Town: Eindhoven

Postcode: 5621 EA

Country: Netherlands

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **INN**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr. Sex: (•) Male ( ) Female

First name: **Pierre** Last name: **Kil**

E-Mail: **pierre@openremote.org**

Position in org.: CEO / Application Development

Department: Management ☐ Same as organisation

☒ Same as organisation address

Street: Musschenbroekstraat 19

Town: Eindhoven Post code: 5621 EA

Country: Netherlands

Website: www.openremote.com

Phone 1: +31639501214 Phone 2: +xxx xxxxxxxxx Fax: +xxx xxxxxxxxx

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **IMP**

PIC	***Legal name***
917471009	*P.G.Kuijpers & Zonen B.V.*

Short name: IMP

Address of the organisation

Street Panovenweg 18

Town Helmond

Postcode 5708 HR

Country Netherlands

Webpage www.kuijpers.nl

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... unknown
Non-profit ..... unknown
International organisation ..... unknown
International organisation of European interest ..... unknown
Secondary or Higher education establishment ..... unknown
Research organisation ..... unknown
Legal person ..... yes

Enterprise Data

SME self-declared status ..... unknown
SME self-assessment ..... unknown
SME validation sme ..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: -

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **IMP**

Department(s) carrying out the proposed work

Department 1

Department name: R&D team ☐ not applicable

☒ Same as organisation address

Street: Panovenweg 18

Town: Helmond

Postcode: 5708 HR

Country: Netherlands

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **IMP**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr. Sex: (•) Male ( ) Female

First name: **Alex** Last name: **Hesling**

E-Mail: **ahesling@kuijpers.com**

Position in org.: Director

Department: Impuls ☐ Same as organisation

☒ Same as organisation address

Street: Panovenweg 18

Town: Helmond Post code: 5708 HR

Country: Netherlands

Website: www.Kuijpers.nl

Phone 1: +3145979078 Phone 2: *+xxx xxxxxxxxx* Fax: *+xxx xxxxxxxxx*

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **DAPP**

PIC	***Legal name***
999951467	*D'APPOLONIA SPA*

Short name: DAPP

Address of the organisation

Street Via San Nazaro 19

Town GENOVA

Postcode 16145

Country Italy

Webpage www.dappolonia.it

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... no

Non-profit ..... no

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Legal person ..... yes

Enterprise Data

SME self-declared status..... unknown

SME self-assessment ..... unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: 721 - Research and experimental development on natural sciences and engineering

Department(s) carrying out the proposed work

No department involved

Department name ☒ not applicable

☐ Same as organisation address

Street *Please enter street name and number.*

Town

Postcode

Country

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **DAPP**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mrs Sex: ○ Male ◉ Female

First name **Margherita** Last name **Cioffi**

E-Mail **margherita.cioffi@dappolonia.it**

Position in org.: Project Manager

Department: - ☐ Same as organisation

☐ Same as organisation address

Street: Viale Cesare Pavese, 305

Town: Roma Post code: 00144

Country: Italy

Website: http://www.dappolonia.it

Phone 1: +39 06 59450336 Phone 2: - Fax: -

Other contact persons

First Name	***Last Name***	***E-mail***	***Phone***
Agnieszka	Lisowska	agnieszka.lisowska@dappolonia.it	+39 010 3628148
Margherita	Scotto	margherita.scotto@dappolonia.it	+39 010 3628148
Fabio	Sagnelli	fabio.sagnelli@dappolonia.it	+39 010 3628148

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **IRE**

PIC	***Legal name***
936508229	*INFRASTRUTTURE RECUPERO ENERGIA AGENZIA REGIONALE LIGURE - I.R.E. SPA*

Short name: IRE

Address of the organisation

Street VIA PESCHIERA 16

Town GENOVA

Postcode 16122

Country Italy

Webpage www.ireliguria.it

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... no

Non-profit ..... no

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Legal person ..... yes

Enterprise Data

SME self-declared status..... unknown

SME self-assessment ..... unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: 7110 - Architectural and engineering activities and related technical consultancy

Department(s) carrying out the proposed work

No department involved

Department name ☒ not applicable

☐ Same as organisation address

Street *Please enter street name and number.*

Town

Postcode

Country

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **IRE**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mrs

Sex: ○ Male ◉ Female

First name: **Roberta**

Last name: **Casapietra**

E-Mail: **casapietra@ireliguria.it**

Position in org.: Manager of EU projects unit

Department: Energy

☐ Same as organisation

☐ Same as organisation address

Street: Via XX Settembre 41

Town: Genova

Post code: 16121

Country: Italy

Website: www.ireliguria.it

Phone 1: +390105488725

Phone 2: *+xxx xxxxxxxxx*

Fax: *+xxx xxxxxxxxx*

Other contact persons

First Name	***Last Name***	***E-mail***	***Phone***
Michela	Fossa	fossa@ireliguria.it	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **ESP**

PIC	***Legal name***
950094922	*Parc Cientific Tecnologic i empresarial de la Universitat Jaume I, S.L.*

Short name: ESP

Address of the organisation

Street Avda Vicente Sos Baynat

Town CASTELLON

Postcode 12071

Country Spain

Webpage www.espaitec.uji.es

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... no

Non-profit ..... no

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Legal person ..... yes

Enterprise Data

SME self-declared status ..... unknown

SME self-assessment ..... unknown

SME validation sme ..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: 8299 - Other business support service activities n.e.c.

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **ESP**

Department(s) carrying out the proposed work

Department 1

Department name: Innovation dpt. ☐ not applicable

☒ Same as organisation address

Street: Avda Vicente Sos Baynat

Town: CASTELLON

Postcode: 12071

Country: Spain

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **ESP**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr. Sex: (•) Male ( ) Female

First name: **Juan** Last name: **Bertolin**

E-Mail: **juan.bertolin@espaitec.uji.es**

Position in org.: Chief innovation & project officer

Department: Innovation dpt. ☐ Same as organisation

☒ Same as organisation address

Street: Avda Vicente Sos Baynat

Town: CASTELLON Post code: 12071

Country: Spain

Website: www.espaitec.uji.es

Phone 1: Phone 2: +xxx xxxxxxxxx Fax: +xxx xxxxxxxxx

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **PRA**

PIC	***Legal name***
987303928	*hlavní město Praha*

Short name: PRA

Address of the organisation

Street Mariánské Náměstí 2

Town Praha

Postcode 11000

Country Czech Republic

Webpage

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... no

Non-profit ..... no

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Legal person ..... yes

Enterprise Data

SME self-declared status ..... unknown

SME self-assessment ..... unknown

SME validation sme ..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: - - Not applicable

Department(s) carrying out the proposed work

Department 1

Department name: Environmental Protection Department ☐ not applicable

☐ Same as organisation address

Street: Jungmannova 35/29

Town: Praha

Postcode: 11000

Country: Czech Republic

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **PRA**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Ms Sex: ○ Male ◉ Female

First name: **Sarka** Last name: **Tomanova**

E-Mail: **sarka.tomanova@praha.eu**

Position in org.: Project consultant

Department: Chief Executive of Prague City Hall's Office ☐ Same as organisation

☐ Same as organisation address

Street: Jungmannova 35/29

Town: Praha 1 Post code: 110 00

Country: Czech Republic

Website: www.praha.eu

Phone 1: +420236002274 Phone 2: +420773070635 Fax: *+xxx xxxxxxxxx*

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **TUE**

PIC	***Legal name***
999977269	*TECHNISCHE UNIVERSITEIT EINDHOVEN*

Short name: TUE

Address of the organisation

Street DEN DOLECH 2

Town EINDHOVEN

Postcode 5612 AZ

Country Netherlands

Webpage www.tue.nl/en

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... yes

Non-profit ..... yes

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... yes

Research organisation ..... no

Legal person ..... yes

Enterprise Data

SME self-declared status ..... 2007 - no

SME self-assessment ..... unknown

SME validation sme ..... 2007 - no

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: 853 - Higher education

Department(s) carrying out the proposed work

Department 1

Department name: TUe Innovation Lab / Lighthouse ☐ not applicable

☒ Same as organisation address

Street: DEN DOLECH 2

Town: EINDHOVEN

Postcode: 5612 AZ

Country: Netherlands

Department 2

Department name: Built Environment ☐ not applicable

☒ Same as organisation address

Street: DEN DOLECH 2

Town: EINDHOVEN

Postcode: 5612 AZ

Country: Netherlands

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **TUE**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Dr. Sex: ○ Male ◉ Female

First name **Elke** Last name **den OUden**

E-Mail **e.d.ouden@tue.nl**

Position in org.: Industrial Fellow

Department: TU/e Innovation Lab Lighthouse ☐ Same as organisation

☒ Same as organisation address

Street: DEN DOLECH 2

Town: EINDHOVEN Post code: 5612 AZ

Country: Netherlands

Website: www.tue.nl

Phone 1: 0031402478211 Phone 2: +xxx xxxxxxxxx Fax: +xxx xxxxxxxxx

Other contact persons

First Name	*Last Name*	*E-mail*	*Phone*
G.N.M.J.	Verschuren	g.n.m.j.verschuren@tue.nl	+31402475626

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **UAV**

PIC	***Legal name***
999865331	*UNIVERSIDADE DE AVEIRO*

Short name: UAV

Address of the organisation

Street CAMPO UNIVERSITARIO DE SANTIAGO

Town AVEIRO

Postcode 3810 193

Country Portugal

Webpage www.ua.pt

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... no

Legal person ..... yes

Non-profit ..... yes

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... yes

Research organisation ..... yes

Enterprise Data

SME self-declared status ..... 2014 - no

SME self-assessment ..... unknown

SME validation sme ..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: - - Not applicable

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **UAV**

Department(s) carrying out the proposed work

Department 1

Department name: CESAM - Department of Environment and Planning ☐ not applicable

☒ Same as organisation address

Street: CAMPO UNIVERSITARIO DE SANTIAGO

Town: AVEIRO

Postcode: 3810 193

Country: Portugal

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **UAV**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Dr. Sex: (•) Male ( ) Female

First name **Peter** Last name **Roebeling**

E-Mail **peter.roebeling@ua.pt**

Position in org.: Research scientist

Department: CESAM - Department of Environment and Planning ☐ Same as organisation

☒ Same as organisation address

Street: CAMPO UNIVERSITARIO DE SANTIAGO

Town: AVEIRO Post code: 3810 193

Country: Portugal

Website: http://www.cesam.ua.pt/roebeling

Phone 1: +351234370387 Phone 2: +xxx xxxxxxxxx Fax: +351234370309

Other contact persons

First Name	*Last Name*	*E-mail*	*Phone*
Teresa	fidelis	teresafidelis@ua.pt	+351234370395

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **STU**

PIC	***Legal name***
999974747	*UNIVERSITAET STUTTGART*

Short name: STU

Address of the organisation

Street KEPLERSTRASSE 7

Town STUTTGART

Postcode 70174

Country Germany

Webpage www.uni-stuttgart.de

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... yes
Non-profit ..... yes
International organisation ..... no
International organisation of European interest ..... no
Secondary or Higher education establishment ..... yes
Research organisation ..... yes
Legal person ..... yes

Enterprise Data

SME self-declared status ..... 2012 - no
SME self-assessment ..... unknown
SME validation sme ..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: 853 - Higher education

Department(s) carrying out the proposed work

Department 1

Department name: Institute for Human factors and technology management IAT ☐ not applicable

☐ Same as organisation address

Street: Nobelstrasse 12

Town: Stuttgart

Postcode: 70569

Country: Germany

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **STU**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mrs Sex: ○ Male ◉ Female

First name: **Nora** Last name: **Fanderl**

E-Mail: **nora.fanderl@iat.uni-stuttgart.de**

Position in org.: Scientist

Department: Institute for Human factors and technology management IAT ☐ Same as organisation

☐ Same as organisation address

Street: Nobelstrasse 12

Town: Stuttgart Post code: 70569

Country: Germany

Website: http://www.iat.uni-stuttgart.de/

Phone 1: +497119702301 Phone 2: +4915116327774 Fax: +xxx xxxxxxxxx

Other contact persons

First Name	*Last Name*	*E-mail*	*Phone*
Silvia	Meyer	eu.finanzen@iat.uni-stuttgart.de	+497119702230
Linda	Scholz	linda.scholz@iat.uni-stuttgart.de	+497119702230
Antje	Stokman	antje.stokman@ilpoe.uni-stuttgart.de	+49 711 685 83380
Hans-Georg	Schwarz-v.Raumer	svr@ilpoe.uni-stuttgart.de	+49711685 84145

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **LTU**

PIC	***Legal name***
999876874	*LULEA TEKNISKA UNIVERSITET*

Short name: LTU

Address of the organisation

Street UNIVERSITETSOMRADET PORSON

Town LULEA

Postcode 971 87

Country Sweden

Webpage www.ltu.se

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... yes

Non-profit ..... yes

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... yes

Research organisation ..... yes

Legal person ..... yes

Enterprise Data

SME self-declared status ..... unknown

SME self-assessment ..... unknown

SME validation sme ..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: 853 - Higher education

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **LTU**

Department(s) carrying out the proposed work

Department 1

Department name: Department of Computer Science, Electrical and Space Engineering ☐ not applicable

☒ Same as organisation address

Street: UNIVERSITETSOMRADET PORSON

Town: LULEA

Postcode: 971 87

Country: Sweden

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **LTU**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Dr. Sex: ○ Male ◉ Female

First name: **Marita** Last name: **Holst**

E-Mail: **marita.holst@ltu.se**

Position in org.: Senior Project Manager

Department: Department of Computer Science, Electrical and Space Engineering ☐ Same as organisation

☒ Same as organisation address

Street: UNIVERSITETSOMRADET PORSON

Town: LULEA Post code: 971 87

Country: Sweden

Website: www.ltu.se/cdt

Phone 1: +46920492289 Phone 2: +46706465414 Fax: *+xxx xxxxxxxxx*

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **ARU**

PIC	***Legal name***
917484977	*OVE ARUP & PARTNERS HONG KONG LTD*

Short name: ARU

Address of the organisation

Street Level 5, Festival Walk, 80 Tat Chee Avenue

Town Hong Kong

Postcode

Country Hong Kong

Webpage http://www.arup.com/

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... unknown

Non-profit ..... unknown

International organisation ..... unknown

International organisation of European interest ..... unknown

Secondary or Higher education establishment ..... unknown

Research organisation ..... unknown

Legal person ..... yes

Enterprise Data

SME self-declared status..... unknown

SME self-assessment ..... unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: -

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **ARU**

Department(s) carrying out the proposed work

Department 1

Department name: R&D team ☐ not applicable

☒ Same as organisation address

Street: Level 5, Festival Walk, 80 Tat Chee Aven

Town: Hong Kong

Postcode:

Country: Hong Kong

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **ARU**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Dr. Sex: (•) Male ( ) Female

First name: **Shu-wei** Last name: **Wu**

E-Mail: **shu-wei.wu@arup.com**

Position in org.: Research Analyst

Department: R&D team ☐ Same as organisation

☒ Same as organisation address

Street: Level 5, Festival Walk, 80 Tat Chee Avenue

Town: Hong Kong Post code:

Country: Hong Kong

Website: http://www.arup.com/

Phone 1: +852 22683462 Phone 2: +xxx xxxxxxxxx Fax: +xxx xxxxxxxxx

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **HON**

PIC	***Legal name***
926603850	*Hong Kong Polytechnic University*

Short name: HON

Address of the organisation

Street Yu Choi Road, Hung Hom

Town Kowloon

Postcode

Country Hong Kong

Webpage http://www.polyu.edu.hk

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... yes
Non-profit ..... yes
International organisation ..... no
International organisation of European interest ..... no
Secondary or Higher education establishment ..... yes
Research organisation ..... yes

Legal person ..... yes

Enterprise Data

SME self-declared status ..... unknown
SME self-assessment ..... unknown
SME validation sme ..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: -

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **HON**

Department(s) carrying out the proposed work

Department 1

Department name: Civil & Environmental Engineering, PolyU ☐ not applicable

☒ Same as organisation address

Street: Yu Choi Road, Hung Hom

Town: Kowloon

Postcode:

Country: Hong Kong

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **HON**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Dr. Sex: (•) Male ( ) Female

First name: **Yuhong** Last name: **Wang**

E-Mail: **yuhong.wang@polyu.edu.hk**

Position in org.: Associate Professor

Department: Civil & Environmental Engineering, PolyU ☐ Same as organisation

☒ Same as organisation address

Street: Yu Choi Road, Hung Hom

Town: Kowloon Post code:

Country: Hong Kong

Website: https://www.polyu.edu.hk/cee/~ceyhwang

Phone 1: +852 27664489 Phone 2: +852 63145419 Fax: *+xxx xxxxxxxxx*

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **UBA**

PIC	***Legal name***
998076457	*UBATEC SA*

Short name: UBA

Address of the organisation

Street Viamonte 577

Town Buenos Aires City

Postcode C1053ABK

Country Argentina

Webpage www.ubatec.uba.ar

Legal Status of your organisation

Research and Innovation legal statuses

Public body ..... no

Legal person ..... yes

Non-profit ..... unknown

International organisation ..... unknown

International organisation of European interest ..... unknown

Secondary or Higher education establishment ..... unknown

Research organisation ..... unknown

Enterprise Data

SME self-declared status..... unknown

SME self-assessment ..... unknown

SME validation sme..... unknown

Based on the above details of the Beneficiary Registry the organisation is not an SME (small- and medium-sized enterprise) for the call.

NACE Code: 74.1 - Legal, accounting, auditing, consultancy

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **UBA**

Department(s) carrying out the proposed work

No department involved

Department name ☒ not applicable

☐ Same as organisation address

Street *Please enter street name and number.*

Town

Postcode

Country

Dependencies with other proposal participants

Character of dependence	***Participant***	

Proposal ID **730052-2** *Acronym* **UNALAB** *Short name* **UBA**

Person in charge of the proposal

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Dr. Sex: (•) Male ( ) Female

First name: **Eduardo** Last name: **Cassullo**

E-Mail: **cassullo@ubatec.uba.ar**

Position in org.: Manager

Department: - [ ] Same as organisation

[ ] Same as organisation address

Street: Av. Pte. Roque Saenz Peña 938 – 6° Piso

Town: Ciudad Autónoma de Buenos Aires Post code: C1035AAR

Country: Argentina

Website: www.ubatec.uba.ar

Phone 1: +54 11 4326 0525 Phone 2: +xxx xxxxxxxxx Fax: +xxx xxxxxxxxx

Proposal ID **730052-2** *Acronym* **UNALAB**

3 - Budget for the proposal

No	Participant	Country	(A) Direct personnel costs/€	(B) Other direct costs/€	(C) Direct costs of sub-contracting/€	(D) Direct costs of providing financial support to third parties/€	(E) Costs of inkind contributions not used on the beneficiary's premises/€	(F) Indirect Costs / € (=0.25(A+B-E))	(G) Special unit costs covering direct & indirect costs / €	(H) Total estimated eligible costs / € (=A+B+C+D +F+G) BENEFICIARY	(I) Reimburse-ment rate (%) BENEFICIARY	(J) Max.EU Contribution / € (=H*I) BENEFICIARY	(K) Costs of third parties linked to participant THIRD PARTIES	(L) Max.EU Contribution / € THIRD PARTIES	(M) Total Costs for BENEFICIARY & THIRD PARTIES (=H+K)	(N) Max.EU Contribution / € BENEFICIARY & THIRD PARTIES (=J+L)	(O) Requested EU Contribution / € BENEFICIARY & THIRD PARTIES
1	Vtt	FI	824500	68000	0	0	0	223125,00	0	1115625,00	100	1115625,00	0	0	1115625,00	1115625,00	1115625,00
2	Fhg	DE	435000	45500	0	0	0	120125,00	0	600625,00	100	600625,00	0	0	600625,00	600625,00	600625,00
3	Ein	NL	535500	453700	550000	0	0	247300,00	0	1786500,00	100	1786500,00	0	0	1786500,00	1786500,00	1786500,00
4	Gen	IT	294500	953700	150000	0	0	312050,00	0	1710250,00	100	1710250,00	0	0	1710250,00	1710250,00	1710250,00
5	Tre	FI	531000	503700	145000	0	0	258675,00	0	1438375,00	100	1438375,00	0	0	1438375,00	1438375,00	1438375,00
6	Sta	NO	150000	9000	0	0	0	39750,00	0	198750,00	100	198750,00	0	0	198750,00	198750,00	198750,00
7	Cas	ES	60000	9000	0	0	0	17250,00	0	86250,00	100	86250,00	0	0	86250,00	86250,00	86250,00
8	Can	FR	60000	9000	0	0	0	17250,00	0	86250,00	100	86250,00	0	0	86250,00	86250,00	86250,00
9	Ipr	CZ	25500	9000	0	0	0	8625,00	0	43125,00	100	43125,00	0	0	43125,00	43125,00	43125,00
10	Bas	TR	54000	9000	0	0	0	15750,00	0	78750,00	100	78750,00	0	0	78750,00	78750,00	78750,00
11	Enoll	BE	330000	42000	0	0	0	93000,00	0	465000,00	100	465000,00	0	0	465000,00	465000,00	465000,00
12	Errin	BE	182000	25850	0	0	0	51962,50	0	259812,50	100	259812,50	0	0	259812,50	259812,50	259812,50
13	Lan	IT	120000	12850	0	0	0	33212,50	0	166062,50	70	116243,75	0	0	166062,50	116243,75	116243,75
14	Eng	IT	545000	32200	0	0	0	144300,00	0	721500,00	70	505050,00	100000	70000	821500,00	575050,00	575050,00
15	M3s	IT	185000	9000	0	0	0	48500,00	0	242500,00	70	169750,00	0	0	242500,00	169750,00	169750,00
16	Ram	FI	204000	9000	0	0	0	53250,00	0	266250,00	70	186375,00	0	0	266250,00	186375,00	186375,00
17	Inn	NL	201280	69000	0	0	0	67570,00	0	337850,00	70	236495,00	0	0	337850,00	236495,00	236495,00
18	Imp	NL	171000	814000	0	0	0	246250,00	0	1231250,00	70	861875,00	0	0	1231250,00	861875,00	861875,00
19	Dapp	IT	294000	20000	0	0	0	78500,00	0	392500,00	70	274750,00	0	0	392500,00	274750,00	274750,00

Proposal ID **730052-2** *Acronym* **UNALAB**

20	Ire	IT	265200	75400	0	0	0	85150,00	0	425750,00	70	298025,00	0	0	425750,00	298025,00	298025,00
21	Esp	ES	59462	9000	0	0	0	17115,50	0	85577,50	70	59904,25	0	0	85577,50	59904,25	59904,25
22	Pra	CZ	25500	9000	0	0	0	8625,00	0	43125,00	70	30187,50	0	0	43125,00	30187,50	30187,50
23	Tue	NL	482770	42800	20500	0	0	131392,50	0	677462,50	100	677462,50	0	0	677462,50	677462,50	677462,50
24	Uav	PT	333720	54200	0	0	0	96980,00	0	484900,00	100	484900,00	0	0	484900,00	484900,00	484900,00
25	Stu	DE	390656	36000	0	0	0	106664,00	0	533320,00	100	533320,00	0	0	533320,00	533320,00	533320,00
26	Ltu	SE	247500	21000	10000	0	0	67125,00	0	345625,00	100	345625,00	0	0	345625,00	345625,00	345625,00
27	Aru	HK	250000	15000	0	0	0	66250,00	0	331250,00	70	231875,00	0	0	331250,00	231875,00	0,00
28	Hon	HK	350000	15000	0	0	0	91250,00	0	456250,00	100	456250,00	0	0	456250,00	456250,00	0,00
29	Uba	AR	35250	21500	0	0	0	14187,50	0	70937,50	70	49656,25	0	0	70937,50	49656,25	49656,25
	Total		7642338	3402400	875500	0	0	2761184,50	0	14681422,50		13387056,75	100000,00	70000,00	14781422,50	13457056,75	12768931,75

Proposal ID **730052-2** *Acronym* **UNALAB**

4 - Ethics issues table

1. HUMAN EMBRYOS/FOETUSES		Page
Does your research involve Human Embryonic Stem Cells (hESCs)?	○ Yes ◉ No	
Does your research involve the use of human embryos?	○ Yes ◉ No	
Does your research involve the use of human foetal tissues / cells?	○ Yes ◉ No	
2. HUMANS		**Page**
Does your research involve human participants?	◉ Yes ○ No	33,47
Are they volunteers for social or human sciences research?	◉ Yes ○ No	33,47
Are they persons unable to give informed consent?	○ Yes ◉ No	
Are they vulnerable individuals or groups?	○ Yes ◉ No	
Are they children/minors?	○ Yes ◉ No	
Are they patients?	○ Yes ◉ No	
Are they healthy volunteers for medical studies?	○ Yes ◉ No	
Does your research involve physical interventions on the study participants?	○ Yes ◉ No	
3. HUMAN CELLS / TISSUES		**Page**
Does your research involve human cells or tissues (other than from Human Embryos/ Foetuses, i.e. section 1)?	○ Yes ◉ No	
4. PERSONAL DATA		**Page**
Does your research involve personal data collection and/or processing?	◉ Yes ○ No	33
Does it involve the collection and/or processing of sensitive personal data (e.g: health, sexual lifestyle, ethnicity, political opinion, religious or philosophical conviction)?	○ Yes ◉ No	
Does it involve processing of genetic information?	○ Yes ◉ No	
Does it involve tracking or observation of participants?	○ Yes ◉ No	
Does your research involve further processing of previously collected personal data (secondary use)?	◉ Yes ○ No	35
5. ANIMALS		**Page**

Proposal ID **730052-2** *Acronym* **UNALAB**

Does your research involve animals?	◯ Yes ◉ No	
6. THIRD COUNTRIES		Page
In case non-EU countries are involved, do the research related activities undertaken in these countries raise potential ethics issues?	◯ Yes ◉ No	
Do you plan to use local resources (e.g. animal and/or human tissue samples, genetic material, live animals, human remains, materials of historical value, endangered fauna or flora samples, etc.)?	◯ Yes ◉ No	
Do you plan to import any material - including personal data - from non-EU countries into the EU?	◯ Yes ◉ No	
Do you plan to export any material - including personal data - from the EU to non-EU countries?	◯ Yes ◉ No	
In case your research involves low and/or lower middle income countries, are any benefits-sharing actions planned?	◯ Yes ◉ No	
Could the situation in the country put the individuals taking part in the research at risk?	◯ Yes ◉ No	
7. ENVIRONMENT & HEALTH and SAFETY		Page
Does your research involve the use of elements that may cause harm to the environment, to animals or plants?	◯ Yes ◉ No	
Does your research deal with endangered fauna and/or flora and/or protected areas?	◯ Yes ◉ No	
Does your research involve the use of elements that may cause harm to humans, including research staff?	◯ Yes ◉ No	
8. DUAL USE		Page
Does your research involve dual-use items in the sense of Regulation 428/2009, or other items for which an authorisation is required?	◯ Yes ◉ No	
9. EXCLUSIVE FOCUS ON CIVIL APPLICATIONS		Page
Could your research raise concerns regarding the exclusive focus on civil applications?	◯ Yes ◉ No	
10. MISUSE		Page
Does your research have the potential for misuse of research results?	◯ Yes ◉ No	
11. OTHER ETHICS ISSUES		Page
Are there any other ethics issues that should be taken into consideration? Please specify	◯ Yes ◉ No	

I confirm that I have taken into account all ethics issues described above and that, if any ethics issues apply, I will complete the ethics self-assessment and attach the required documents. ☒

How to Complete your Ethics Self-Assessment

5 - Call specific questions

Declarations on stage-2 changes

The full stage-2 proposal must be consistent with the short outline proposal submitted to the stage-1- in particular with respect to the proposal characteristics addressing the concepts of excellence and impact.

Are there substantial differences compared to the stage-1 proposal?	○ Yes	◉ No

Data management activities

A new focus within Horizon 2020 is data management, for example through the use of Data Management Plan (DMP).

DMPs detail what data the project will generate, whether and how it will be exploited or made accessible for verification and re-use, and how it will be curated and preserved.

The use of a DMP is required for projects participating in the Open Research Data Pilot in the form of a deliverable in the first 6 months of the project (possible updates during the project).

Other projects are invited to submit a DMP if relevant for their planned research.

Are data management activities relevant for your proposed project?	○ Yes	◉ No

Open Research Data Pilot in Horizon 2020

If selected, all applicants will participate in the Pilot on Open Research Data in Horizon 2020 , which aims to improve and maximise access to and re-use of research data generated by actions.

Participants in the Pilot will be invited to formulate a Data Management Plan (DMP). DMPs detail what data the project will generate, whether and how it will be exploited or made accessible for verification and re-use, and how it will be curated and preserved.

Participating in the Pilot is flexible in the sense that it does not mean that all research data needs to be open. Rather, projects can define certain datasets to remain closed via a Data Management Plan (DMP).

Applicants also have the possibility to opt out of this Pilot. In this case, applicants must indicate a reason for this choice (see options below).

Please note that participation in this Pilot does not constitute part of the evaluation process. Proposals will not be penalised for opting out.

We wish to opt out of the Pilot on Open Research Data in Horizon 2020.	○ Yes	◉ No

Call identifier: SCC-02-2016-2017

Topic: Demonstrating innovative nature-based solutions in cities

Title: Urban Nature Labs

NO.	PARTICIPANT LEGAL NAME	SHORT NAME	COUNTRY	ORG. TYPE[1]
1	TEKNOLOGIAN TUTKIMUSKESKUS VTT OY	VTT	FI	RTO
2	FRAUNHOFER GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG EV	FHG	DE	RTO
3	GEMEENTE EINDHOVEN	EIN	NL	PUBLIC
4	COMUNE DI GENOVA	GEN	IT	PUBLIC
5	TAMPEREEN KAUPUNKI	TRE	FI	PUBLIC
6	STAVANGER COMMUNE	STA	NO	PUBLIC
7	AYUNTAMIENTO DE CASTELLÓN DE LA PLANA	CAS	ES	PUBLIC
8	MAIRIE DE CANNES	CAN	FR	PUBLIC
9	INSTITUT PLANOVANI A ROZVOJE HLAVNIHO MESTA PRAHY	IPR	CZ	PUBLIC
10	T.C. BAŞAKŞEHIR BELEDIYESI	BAS	TR	PUBLIC
11	EUROPEAN NETWORK OF LIVING LABS IVZW	ENoLL	BE	PNP
12	EUROPEAN REGIONS RESEARCH AND INNOVATION NETWORK	ERRIN	BE	PNP
13	LAND MILANO	LAN	IT	IND
14	ENGINEERING – INGEGNERIA INFORMATICA SPA	ENG	IT	IND
15	M3S SRL	M3S	IT	IND
16	RAMBOLL MANAGEMENT CONSULTING	RAM	FI	IND
17	INNOVATION HUB (OPENREMOTE)	INN	NL	SME
18	!MPULS	IMP	NL	SME
19	D'APPOLONIA SPA	DAPP	IT	IND
20	INFRASTRUTTURE RECUPERO ENERGIA AGENZIA REGIONALE LIGURE – I.R.E. S.P.A.	IRE	IT	PUBLIC
21	PARC CIENTÍFIC, TECNOLÒGIC I EMPRESARIAL DE LA UNIVERSITAT JAUME I DE CASTELLÓ	ESP	ES	IND
22	HLAVNÍ MĚSTO PRAHA	PRA	CZ	IND
23	TECHNISCHE UNIVERSITEIT EINDHOVEN	TUE	NL	UNI
24	UNIVERSIDADE DE AVEIRO	UAV	PT	UNI
25	UNIVERSITAET STUTTGART	STU	DE	UNI
26	LULEÅ TEKNISKA UNIVERSITET	LTU	SE	UNI
27	OVE ARUP & PARTNERS HONG KONG LTD	ARU	HK	IND
28	HONG KONG POLYTECHNIC UNIVERSITY	HON	HK	UNI
29	UBATEC SA	UBA	AR	IND
OBS[2]	CITY OF GUANGZHOU	GUA	CN	PUBLIC
OBS	NETWORK OF BRAZILIAN INTELLIGENT CITIES	BRA	BR	PUBLIC

[1] IND = Industrial Company; PNP = Private Non-Profit Organisation; PUBLIC = Public Body; RTO = Research Technology Organisation; SME = Small / Medium Enterprise; UNI = University.

[2] OBS = Observer; supporter of the UNaLab Innovation Action without formal partnership in the consortium.

Table of Contents

EXCELLENCE

UNaLab is a smart network of ten partner cities facing the challenges of climate change and growing urbanisation, aiming to foster development of an EU reference framework for nature-based solutions. The network will co-create and demonstrate *locally attuned innovative water management systems in the context of an integrated urban ecological approach: the Urban Nature Lab (UNaLab).*

Innovative nature-based technologies can provide effective solutions to the multitude of urban challenges posed by the world's changing climate. These challenges are the focal point for the UNaLab consortium of ten partner cities and research, business and industry partners jointly aiming to achieve pleasant, healthy, climate resilient cities (*FIGURE 1*). UNaLab has three front-runner cities, Eindhoven (NL), Genova (IT), and Tampere (FI), each with a track record of employing smart, citizen-driven solutions for sustainable development. These front-runners support five European follower cities with a balanced geographical spread, and diversity in size and climate conditions: Başakşehir (TR), Cannes (FR), Castellón (ES), Prague (CZ), and Stavanger (NO). In addition, the cities of Buenos Aires (AR) and Hong Kong (CN) join the consortium as non-EU follower cities plus Guangzhou (CN) and the Network of Brazilian Intelligent Cities (BR) as observers, to create a truly global marketplace. The consortium will co-create and co-implement with stakeholders integrated nature-based solutions (NBS), demonstrate the benefits, co-benefits, cost-effectiveness and economic viability of NBS systems within an ULL framework, and develop and test innovative decision-making schemes for implementation and replication of effective NBS systems based on solid business models and financing solutions.

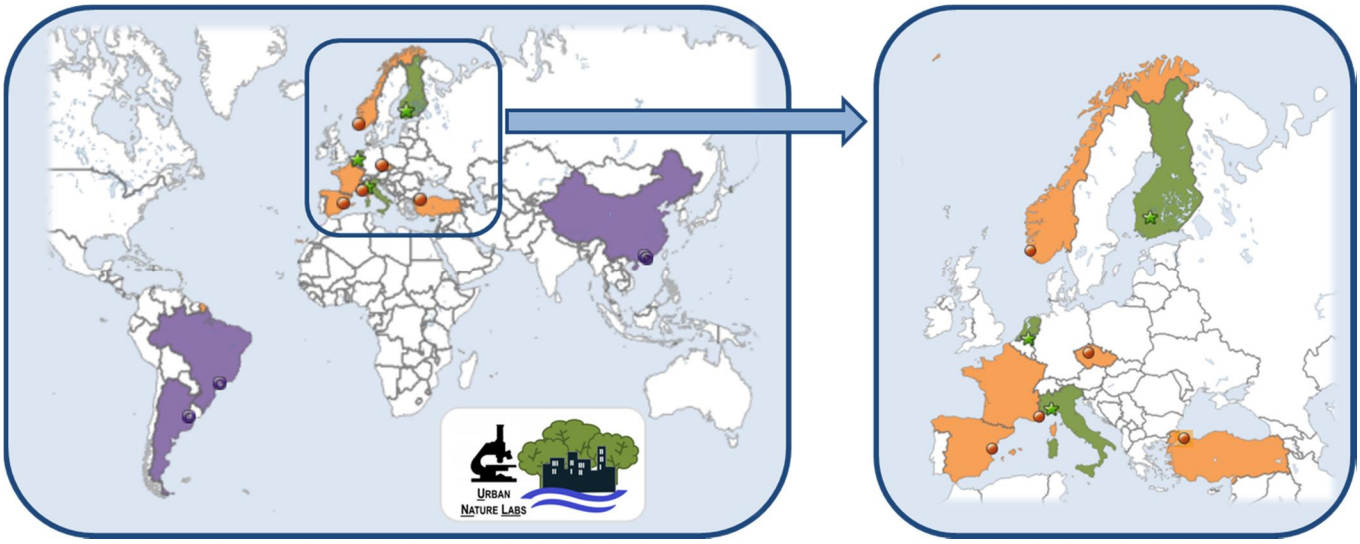


FIGURE 1. GLOBAL DISTRIBUTION OF UNALAB FRONT-RUNNER, EU FOLLOWER AND NON-EU FOLLOWER CITIES

UNaLab will employ and further develop the Urban Living Lab (ULL)[1] model, and the European Awareness Scenario Workshop (EASW) method[2] in combination with an innovative systemic decision support tool (SDST) for the co-creation of urban nature-based solutions, in order to create an EU reference demonstration and go-to-market environment for NBS. The EASW was tested and applied in a series of projects co-funded by the European Commission and widely disseminated, whilst the SDST was developed and applied in projects co-funded by the European Commission (Aqua-Add[3]) and Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO). Furthermore, support for exploitation and replication activities using a roadmap approach (TU/e) tried and tested in the European funded R4E project[4] will contribute to achieving a comprehensive and innovative NBS toolbox. Roadmaps will be used in all ten partner UNaLab cities, but will particularly focus on providing tools to promote NBS implementation in follower cities.

UNaLab will provide quantitative evidence of NBS efficacy, applicability, and cost-effectiveness, including several comprehensive, user-friendly handbooks for end-users to guide the development and implementation of scientifically-validated NBS schemes and related support systems/frameworks in urban areas beyond the scope of the UNaLab project. UNaLab's up-scaling and replication efforts are supported by a clearly defined replication strategy and dedicated Replication Manager. Whilst ULL NBS demonstration will provide evidence of technical viability, smart UNaLab business and finance models devised will provide a basis for leveraging of investments to generate new economic opportunities including new jobs, products, and services. Innovative models of governance developed during the UNaLab project will demonstrate mechanisms to reduce regulatory and administrative barriers and/or implement new protocols and standards at the municipality level.

[1] URL: http://www.openlivinglabs.eu/FAQ
[2] Launched by DG XIII in cooperation with the European Sustainable Cities and Towns Campaign
[3] URL: http://www.aqua-add.eu/; http://suld.web.ua.pt/
[4] As applied in the R4E project funded by the H2020 – Energy programme, URL: http://www.roadmapsforenergy.eu

UNaLab cities have developed solid investments plans to support NBS demonstrations. *TABLE 1* shows UNaLab front-runner cities' total investment, including public and private resources committed to co-finance NBS demonstrations and the anticipated contribution from the EC. These figures clearly show the strong commitment of the cities to NBS demonstrations.

TABLE 1. TOTAL INVESTMENTS OF THE THREE FRONT-RUNNER CITIES

City	Total investment	Municipal funds	Companies funds	EC contribution
Eindhoven	> € 3 800 000	> € 1 490 000	> € 660 000	€ 400 000
Genova	€ 46 724 074*	€ 46 724 074	/	€ 900 000
Tampere	€ 649 610 000	€ 646 610 000	€ 3 000 000	€ 450 000

The UNaLab consortium is led by VTT Technical Research Centre, which has a world-class track record in research and innovation for sustainable, knowledge-based society and green industrial processes. Consortium partners contribute outstanding expertise in: citizen engagement, fostering innovation ecosystems, and urban living lab implementation (ENoLL, ESP, LTU, UBA); communication and technology transfer beyond project partner cities (ENoLL, ERRIN, IRE, LAN, LTU); innovation in nature-based technologies (IPR, IRE, STU, UAV, VTT, IMP); development of integrated ICT platforms and tools (ENG, M3S, INN); monitoring, performance evaluation/impact assessment, and decision-making support (UAVR, VTT); and, business development and exploitation (FHG, DAPP, TUE).

1.1 Objectives

The world's cities face significant challenges of urban densification and extreme weather conditions due to climate change. Together, UNaLab partner cities commit to addressing future challenges, beginning with climate and water-related issues, within an innovative socially engaged, citizen-driven paradigm. UNaLab cities aim to develop smarter, more inclusive, more resilient and increasingly sustainable societies through nature-based innovation jointly created with stakeholders, by and for people (*TABLE 2*).

The UNaLab ambition is to reassess and reinvent the role and responsibility of local/regional government to facilitate co-design, scenario thinking and co-creation with stakeholders. UNaLab connects a range of local actors (public, private, knowledge and citizens) to design and take responsibility for the sustainable future city emphasising NBS. Effective implementation requires the refinement and application of an innovative systemic decision support tool (SDST) for climate-adapted integrated urban water management. UNaLab links innovative technologies and decision-making processes with an in-depth understanding of the social fabric of cities. Lessons learned from ULL demonstrations in front-runner cities will be used as input for long-term politically adopted and secured sustainability strategies.

The overarching objective of UNaLab is to develop, via co-creation with stakeholders and implementation of 'living lab' demonstration areas, a robust evidence base and European framework of innovative, replicable, and locally-attuned nature-based solutions to enhance the climate and water resilience of cities.

UNaLab front-runner and follower cities are regional leaders, respectively, in urban climate adaptation, water management and/or social networking actions. UNaLab will showcase and leverage existing successful stakeholder-based initiatives in front-runner cites to promote the development or further development of local innovation environments.

Innovative actions within the UNaLab project will build upon on-going activities under Horizon 2020 and other relevant schemes in order to grow the European 'knowledge portfolio' (e.g. Aqua-Add[3], R4E[4], BlueSCities[5], CITYkeys[6], TRIANGULUM[7], SCENT[8], TRANSrisk[9], WIDEST[10], etc.), including clustering with other projects financed under the "Nature-based solutions for territorial resilience" section of the Societal Challenge 5 call 'Climate action, environment, resource efficiency and raw materials'. UNaLab front-runner cities are active in numerous national and EU-level networks and activities including: the European Innovation Partnership on Smart Cities and Communities (EIP-SCC), the Covenant of Mayors for Climate and Energy, the Mayors Adapt Initiative and EU networks such as ERRIN (innovative regions), EUROCITIES (large cities), ENoLL (living labs), and Fedarene (energy agencies), all focused on knowledge-sharing activities. UNaLab will provide additional links among cities. Partnerships with non-EU follower cities Buenos Aires (AR) and Hong Kong (CN) will facilitate development of global markets for European NBS-based technologies to enhance urban climate- and water-resiliency.

[5] BlueSCities Blueprints for Smart Cities, http://www.bluescities.eu/
[6] CITYkeys Smart City performance measurement system, http://citykeys-project.eu/citykeys/home
[7] TRIANGULUM, http://triangulum-project.eu/
[8] SCENT Smart Toolbox for Engaging Citizens into a People-Centric Observation Web, http://cordis.europa.eu/project/rcn/203260_en.html
[9] TRANSrisk Transitions pathways and risk analysis for climate change mitigation and adaptation strategies http://transrisk-project.eu/
[10] WIDEST Water Innovation through Dissemination Exploitation of Smart Technologies, http://www.widest.eu/

TABLE 2. WATER- AND CLIMATE-RELATED CHALLENGES AND PLANNED NATURE-BASED SOLUTIONS IN UNALAB PARTNER CITIES

	Water/climate-related challenges	Flooding	Water scarcity	Water / air pollution	Heat stress	Rapid growth / increasing densification	Climate driven health issues	Habitat loss or fragmentation	Reduced biodiversity
Front-runners	EINDHOVEN	×		×	×	×	×	×	×
	GENOVA	×	×	×	×			×	×
	TAMPERE	×		×		×		×	×
EU Followers	BAŞAKŞEHIR		×	×	×	×	×	×	×
	CANNES	×	×	×	×	×	×	×	×
	CASTELLÓN	×	×	×	×	×	×	×	×
	PRAGUE	×	×	×	×	×	×	×	×
	STAVANGER	×		×		×	×	×	×
Non-EU	BUENOS AIRES	×		×	×	×	×	×	×
	HONG KONG	×	×	×	×	×	×	×	×
	BRAZIL CITIES	×		×	×	×	×	×	×

	Example applicable water/climate-related NBS	Vegetated floodway or swale	Green walls & roofs	Stormwater retention ponds & cisterns	Reforestation/ street trees	Green space establishment	Rivercourse daylighting	Permeable pavements	Real-time environmental monitoring
Front-runners	EINDHOVEN	✓	✓	✓		✓	✓	✓	✓
	GENOVA	✓	✓	✓	✓	✓	✓	✓	✓
	TAMPERE	✓	✓	✓		✓		✓	✓
Followers	BAŞAKŞEHIR	✓	✓			✓		✓	✓
	CANNES	✓	✓	✓		✓		✓	✓
	CASTELLÓN	✓	✓			✓		✓	✓
	PRAGUE	✓	✓	✓	✓	✓		✓	✓
	STAVANGER	✓	✓	✓		✓		✓	✓
Non-EU	BUENOS AIRES	✓	✓	✓	✓	✓		✓	✓
	HONG KONG		✓	✓	✓	✓		✓	✓
	BRAZIL CITIES	✓	✓	✓		✓		✓	✓

Key technical objectives for UNaLab are defined to answer to the challenges identified in the SCC-02-2016 call.

Target 1 - To foster urban innovation ecosystems, wherein stakeholders co-create and optimise scalable, cost-effective, locally-attuned NBS for improved climate and water resilience, by:

- Applying an innovative, systemic approach to engage citizens and stakeholders in the co-design and co-implementation of NBS, based on the EASW method and ULL model.
- Developing a systemic approach to define new roles for local governments and administrations within the stakeholder co-creation process.
- Outlining and validating new governance approaches, capable of connecting sustainability ambitions and social realities and equipping local authorities to implement this systemic approach.
- Developing and/or refining and validating frameworks and tools for participatory decision-making, including a comprehensive handbook describing NBS technologies, an SDST, and visualisation and simulation tools.
- Promoting the engagement and participation of individuals and businesses in all UNaLab activities, by exploiting open innovation approaches, and incentive models and scenarios, with the goal to maximise the results and impacts and to prepare further exploitation.
- Co-developing comprehensive urban ecological area plans, focusing on integrated water management.
- Developing and validating an innovation management framework to support cities' implementation of novel technologies and business or financial schemes.

Target 2 – To develop a robust evidence base and European framework of innovative, replicable, and locally-attuned nature-based solutions in order to achieve significant, measureable improvements in quality of urban life, by:

- Demonstrating and validating, with stakeholders, innovative NBS technologies for enhanced climate and water resilience via establishment of ULLs for NBS demonstration in highly urbanised areas of front-runner cities.
- Establishing an efficient monitoring framework to measure the short-term performance, long-term impact, cost effectiveness and efficiency of NBS technologies implemented in the ULLs.
- Delivering a comprehensive, validated suite of technical NBS solutions in the form of an NBS implementation handbook including NBS technical specifications, performance monitoring and impact assessment guidelines, and maintenance recommendations.
- Continuously monitoring improvements in quality of urban life and evaluating the impact of deployed NBS in front-runner cities through targeted assessment of NBS performance in ULLs for NBS demonstration based on co-developed key performance indicators (KPIs).
- Demonstrating and validating innovative, replicable business models and life cycle costing models for each ULL aimed at upscaling of the ULL to the full city.
- Delivering validated tools to support NBS exploitation and replication by municipalities, including roadmapping guidelines, a framework for management of the EASW co-creation process and ULL co-implementation, a suite of business, finance and municipal governance models, and a guide to municipality-level innovation management.
- Triggering large-scale investments (both public and private) at the local level with reasonable payback periods, and an economic profit in the short to medium term, leading to new employment opportunities.
- Establishing strategic Public-Private Partnerships between cities, industry, innovative SMEs, entrepreneurs, and other stakeholders, creating a favourable environment to enhance cross- sectorial cooperation and the local innovation potential, to integrate local solutions in global markets.

Target 3 - To develop and demonstrate the capability of city-level open data platforms to accelerate NBS co-creation and implementation, by:

- Demonstrating the capability of open city platforms (including open standards and open specifications) to accelerate solution migration among front-runner and follower cities, by preventing vendor lock-in situations and promoting collaboration and innovation.
- Exploiting the transformative nature of ICT to amplify the impacts of NBS co-developed in the UNaLab project, both in spatial terms (wider areas in the pilot cities, more cities outreached) and in terms of the engaged actors (citizens, administration, managers, business actors, and others).
- Defining the detailed architecture of the NBS ICT framework, integrating existing assets and ensuring interoperability between different Internet of Things (IoT) platforms to facilitate integration and replicability.
- Developing customised data management tools in order to organise city-level data in a single, federated open data environment.
- Implementing real-time NBS asset monitoring and performance evaluation using advanced sensor technologies and IoT harmonisation middleware to improve cities' ability to plan, monitor, control and maintain NBS assets.
- Improving access to city data via implementation of a city-level, cloud-based FIWARE environment.

Target 4 - To successfully transfer knowledge and NBS innovations to follower cities, and to support the development and implementation of NBS roadmaps, by:

- Defining an integrated planning framework for NBS which incorporates all technical, social, and economic factors and their interconnections to address the complexity of climate- and water-related urban challenges.
- Establishing an efficient working methodology for knowledge transfer between front-runner and follower cities, including a platform for open communication and data sharing to ensure the effective cooperation between cities integrated with the EU Smart Cities Information System (SCIS, http://smartcities-infosystem.eu/).
- Providing in-depth training and support for NBS roadmap development via stakeholder co-creation workshops in follower cities and mentoring by front-runner cities.
- Working with follower cities to develop individual replication plans for future implementation of locally-attuned, cost effective NBS within each respective follower city.
- Securing political support in each follower city for individual NBS roadmaps prior to the completion of UNaLab.
- Empowering local communities by means of quantitative analysis of both environmental and economic data from demonstration NBS schemes in order to demonstrate their long-term benefit.

1.2 Relation to the work programme

1.2.1 Specific Challenge

UNaLab addresses the topic SCC-02-2016 "Demonstrating innovative NBS for climate and water resilience in cities" (*TABLE 3*). The front-runner cities of Eindhoven (NL), Genova (IT), and Tampere (FI) will demonstrate a portfolio of co-created district scale integrated NBS for enhanced urban climate and water resilience. The processes, models and NBS optimised in front-runner ULL demonstrations will be replicated in the follower cities Başakşehir (TR), Cannes (FR), Castellón (ES), Prague (CZ), and Stavanger (NO). Cutting-edge ICT and IoT harmonisation will link open city data management platforms and effectively integrate the front-runner and follower city actions, thereby facilitating the interoperability and interchangeability of existing and novel software components, data sources, services and devices by promoting the adoption of standardisation and modularisation. The open city data platform will make urban infrastructures available for local industries, entrepreneurs, and SMEs, connecting global businesses with local innovators and establishing a favourable environment for the creation of new eco-technological companies to further exploit the outcomes of UNaLab. The UNaLab consortium will actively scan and integrate European projects and their results in the field of NBS from programmes such as INTERREG, LIFE+, FP7 and Horizon2020, notably the SCC nature-based calls (e.g. SCC-03-2016).

TABLE 3. WORK PROGRAMME SCC-02-2016 OBJECTIVES AND UNALAB CONTRIBUTIONS

SCC-02-2016	CONTRIBUTION OF UNALAB
• *Develop, deploy at an appropriate scale of intervention and demonstrate in 'front-runner' cities as 'living laboratories' innovative, replicable and locally attuned nature-based solutions, with a systemic impact at the scale of intervention, to address the challenges specified below*[11]*.*	UNaLab will implement innovative co-created NBS as living laboratories in urbanised areas within three front-runner cities in distinctly different climates. - Demonstration areas in front-runner cities will implement inclusive local co-creation and establish demonstration Urban Living Labs in districts of significant size at appropriate scale - The UNaLab focus is on providing NBS for problems resulting from extreme weather conditions (e.g. floods, droughts, heat stress and air pollution). - A handbook describing locally-attuned, replicable NBS actions and implementation processes will be developed via an iterative process to maximise NBS exploitation and replication, and, ultimately UNaLab's long-term impact.
• *Solutions should be co-designed, co-developed and co-implemented in a trans-disciplinary, multi-stakeholder and participatory context and systemically embedded in an integrated urban and land use planning.*	UNaLab builds upon the ULL model comprising active engagement, co-creation, and real-life experimentation using the EASW multi-stakeholder and multidisciplinary approach to systematically embed participatory elements. - UNaLab will combine and refine EASW and ULL co-creation methodologies, in concert with a scientifically-validated SDST and state-of-the-art ICT and data management platform, to create an accessible NBS co-creation toolbox. - Through the mobilisation of existing bottom-up, citizen-driven initiatives, e.g. the G-1000 in Eindhoven, citizens and users of the public demonstration spaces in front-runner cities will be engaged in the development, implementation, monitoring and assessment of the selected measures. - The application of an NBS-tailored roadmapping framework to develop co-defined, citizen-driven pathways to urban climate and water resilience provides a valuable tool to support long-term participatory engagement in the co-definition and co-development of smart, sustainable urban areas.
• *Assist 'follower' cities that commit to proactively seek advice, expertise, assistance, capacity building (e.g. through staff exchanges) and mentoring from the 'front-runners' and develop, within the duration of the project, a sustainable urban planning that systemically replicates, embeds and integrates the demonstrated nature-based solutions 'customised' to their particular context to successfully address the*	UNaLab will provide follower cities with in-depth training in EASW and ULL implementation, and support for development of local NBS roadmaps. - UNaLab partners will utilise experiences in related EU projects (e.g. AquaAdd[3], R4E[4], BlueSCities[5], CITYkeys[6], TRIANGULUM[7], etc.) to ensure active transnational cooperation among all partners and further replication potential. - Follower cities will co-define locally-applicable climate- and water-related challenges and existing/potential NBS using the EASW approach, and this information will be integrated within the NBS handbook and refined in an iterative approach during UNaLab to yield a comprehensive, locally-attuned, co-developed suite of NBS. - Follower cities will work closely with front-runner city 'mentors' and experienced

[11] *Demonstrating innovative nature-based solutions for climate and water resilience in cities (2016)*: Actions should aim to improve urban resilience to climate change (mitigation and adaptation) and enhance water resources management sustainability through deployment of nature-based solutions, or an optimal combination of nature-based solutions and other technologies. Trans-disciplinary and community-based approaches including social sciences and humanities in the co-designing, co-development and co-implementation of the solutions is considered necessary.

challenges specified below.	moderators in workshops to develop locally attuned NBS roadmaps for their respective follower urban areas via physical meetings and through a common digital workspace for all UNaLab partners.
• *Engage the 'front-runner' cities (as 'coaching cities') in further networking and knowledge-sharing efforts with cities beyond those directly involved in the project to maximise the benefits of the project for a broader community beyond the limits of the project.*	UNaLab will serve as a knowledge sharing platform to collate disparate pieces of information, validate NBS schemes for urban climate and water resilience, and develop and disseminate applicable technical, social, financial and governance frameworks for successful NBS implementation. - UNaLab will leverage support from EU RIS3 to stimulate uptake and application of UNaLab project outcomes beyond partner cities. - Stakeholder co-creation will provide opportunity for local SMEs and start-ups to enhance NBS-related services and product offerings to better serve the needs of cities in their respective regions, thereby facilitating NBS implementation beyond those directly involved in the UNaLab project. - Expert networks will be engaged in knowledge sharing efforts via *Exploitation*, *Replication* and *Dissemination* activities to maximise uptake of UNaLab outcomes.
• *Set up a robust monitoring scheme to monitor, for a period of at least 2 years within the life of the project, the performance and assess the impact of the deployed solutions in an as quantifiable way as possible against a well-defined baseline regarding the challenges in the participating cities at the time of the proposal…;*	UNaLab will co-develop and implement a monitoring scheme to evaluate both performance and impact of NBS schemes in front-runner cities. - Key indicators of performance (KPIs) and impact (KIIs) will be co-identified with key local stakeholders, project partners and external experts in a workshop approach. - A relevant baseline will be established for each KPI and KII, using existing data from monitoring, statistics, reports, and research studies as well as interviews and questionnaires. - Continuous monitoring of KPIs and KIIs will be undertaken for at least two years during the UNaLab project and will be continued by front-runner cities following project completion. - Quantitative and qualitative statistical analyses will be performed to determine the efficacy of performance and magnitude of impact of NBS.
• *...develop methodologies to assess the efficacy, performance and cost-effectiveness of the solutions compared to alternative options, considering benefits, co-benefits ...and negative impacts that their deployment could entail when addressing the challenges specified below*	UNaLab will co-define and implement a systemic decision support tool (SDST) for flood, drought, pollution and heat risk adaptation planning and management at the urban regional/landscape scale to evaluate potential social, environmental and economic impacts of no-action as compared to NBS implementation with/without population growth and/or climate change. - Important aspects of NBS performance and impact will be assessed based on KPI's and KII's using the SDST for flood, drought, pollution and heat risk adaptation planning and management at the urban/regional landscape scale. - The SDST will integrate new (UNaLab NBS) and existing data from disciplinary models into a spatially-explicit framework at the landscape scale (following Bohnet et al., 2011), to assess the impacts of NBS on flooding (XP-SWMM), water pollution (SWAT), urban heating (WRF/SUEWS), air pollution (WRF/CHEM), and ecosystem services and values (InVEST), as well as urban sprawl, real estate values, population dynamics and gentrification (SULD). - Disciplinary models within the SDST will be parameterised, calibrated and validated against best-available local data and, where applicable, linked in order to account for flow-on effects and co-benefits. - The SDST will incorporate detailed NBS descriptions and characterisations as well financing requirements, to empower communities and facilitate informed decision-making using comprehensive, scientifically validated, locally attuned information.
• *Develop methodologies for replication and up-scaling in different contexts of the solutions deployed in the 'front-runner' cities, including investment strategies, governance and business models and*	UNaLab will deliver for each demonstration city a detailed plan for up-scaling coupled with a thorough assessment of costs and benefits, highlighting the environmental and financial implications and job creation potential of widespread NBS implementation. - Replication will centre on follower cities and cities initially not involved in the UNaLab project.

approaches for their systemic integration in the urban and land use planning.	- Through the roadmapping approach, UNaLab will derive citizen-driven urban development plans and investment strategies for follower cities using the experiences of front-runner cities. - Novel governance frameworks will be developed in support of NBS roadmaps. - The ULL, EASW and roadmap processes will be made available to other cities across the EU. Though the ERRIN network and the EIP-SCC, UNaLab will organise annual working sessions presenting these tools and to invite and stimulate interested cities to start working with them. - A substantial initial market for NBS in Europe will be created by UNaLab via assessment of potential among front-runner and follower cities for innovative customer procurement initiatives.
• *Identify and assess potential regulatory, economic, social (such as gender, age, disability and culture) and technical barriers of relevance to these solutions and propose ways to overcome them.*	UNaLab will identify regulatory, economic and social and technical barriers to NBS implementation, and will work collaboratively with project partners and with stakeholders to co-define solutions to overcome these barriers. - Community based NBS are a constituent element of UNaLab, thus contributing to social cohesion by promoting interaction among stakeholders with diverse cultural and educational backgrounds and from a wide range of age groups, including men, women and "not specific" genders, and disabled and differently-abled individuals. *A key feature of UNaLab is inclusivity.* - Interactions during the combined EASW/ULL co-creation workshops as well as use of simulation models within the SDST will facilitate identification of potential technical, social, economic and regulatory barriers to the adoption of NBS which, in turn, can inform decision-making regarding NBS implementation and/or define strategies to overcome potential barriers.
• *Establish long-term sustainable data platforms to systematically document information and provide evidence on practices and lessons learnt regarding the deployment, cost-effectiveness (including benefits and co-benefits) and performance of nature-based solutions.*	UNaLab will deliver a FIWARE-based set of tools hosted in a 'green' cloud infrastructure including an open data management platform; and, d) IoT harmonisation middleware. This ICT data management platform will: - Facilitate on-going quantitative assessment of the technical, social and economic feasibility, and the long-term impact and sustainability of co-created NBS concepts using an intuitive graphical NBS impact simulator. - Enable City Managers and other stakeholders to readily model NBS processes deployed in front-runner cities and associate KPIs with them, in order to easily promote replication of highly effective NBS in follower cities and beyond. - Monitor impacts of implemented NBS in front-runner cities and enable evaluation of business models and financing strategies for replication in follower cities.
• *Deploy appropriate state-of-the-art digital technologies, ICT and innovative communication strategies and tools securing open access and interoperability along data infrastructures and a continuous building up of the 'knowledge portfolio' through future activities under Horizon 2020 and beyond.*	UNaLab will demonstrate in front-runner cities data storage via an open data environment able to federate existing data management systems as nodes. - ICT platforms employed in UNaLab will be validated as part of a broader urban strategy on the use and presentation of data including. These open data management systems will be embedded within local data management strategies. - A UNaLab open data node will be provided within the cloud platform in order for front-runner and follower cities lacking an existing open data management system to join the UNaLab ICT framework. - The open data platform will manage data collected using IoT platforms installed in in a data workspace which collates real-time IoT data, defined KPIs and KII's, NBS process representations, and other useful data coming from legacy ICT systems of front-runner cities for use in simulation models and decision-making tools.

1.2.2 Scope

The key principles of ULLs - Value, Influence, Realism, Sustainability and Openness – and their framework for co-implementation will be combined with the EASW vision development method developed by the European Commission to stimulate societal carrying capacity for innovative technology co-creation. UNaLab partner cities will implement innovative, integrated NBS for climate and water resilience which are co-created with stakeholders in each urban area. These NBS will be optimised and validated at a district scale using a comprehensive standardised approach involving a balance between citizen-driven co-creation, innovative NBS and supporting ICT technologies, targeted monitoring strategies, novel frameworks for

governance and administration, and smart business and finance models. The NBS for enhanced climate and water resilience developed through the UNaLab project will be equitable, scalable, cost-effective, and economically viable.

Cross-cutting activities within UNaLab front-runner and follower cities summarised in *TABLE 4* centre on:

- *Stakeholder co-creation and urban innovation ecosystem enhancement*
- *Application of a scientifically-validated SDST for NBS*
- *Smart business and finance model development and optimisation*
- *Open city governance and innovation management framework validation*
- *Open city data management platform establishment*
- *Standardised, transparent performance and impact monitoring frameworks*
- *Stakeholder-focused tools and NBS roadmaps to support exploitation, replication and up-scaling*

TABLE 4. CROSS-CUTTING ACTIVITIES OF UNALAB PARTNER CITIES

Models & knowledge-sharing networks		Co-creation & innovation ecosystem	Smart business & finance models	ICLEI	EUROCITIES	EIP-SCC	FEDARENE	Covenant of Mayors for Climate & Energy	ENoLL	C40 Cities Climate Leadership Group
Front-runners	EINDHOVEN	✓			✓	✓		✓	✓	
	GENOVA	✓	✓		✓	✓	✓	✓		
	TAMPERE	✓	✓	✓	✓	✓		✓	✓	
Followers	BAŞAKŞEHIR	✓			✓	✓			✓	
	CANNES	✓					✓			
	CASTELLÓN	✓				✓		✓	✓	
	PRAGUE	✓			✓	✓		✓		
	STAVANGER	✓		✓	✓	✓		✓		
Non-EU	BUENOS AIRES	✓	✓	✓						✓
	HONG KONG	✓	✓							✓
	BRAZIL CITIES	✓	✓							

Frameworks to support NBS implementation		Open data management platform	Open governance	Integrated IoT ICT framework	Innovation management framework	Performance monitoring tools	Impact monitoring framework	SDST to support NBS co-creation	Apps & games	NBS roadmaps
Front-runners	EINDHOVEN	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GENOVA	✓	✓	✓	✓	✓	✓	✓	✓	✓
	TAMPERE	✓	✓	✓	✓	✓	✓	✓	✓	✓
Followers	BAŞAKŞEHIR	✓	✓		✓	✓	✓			✓
	CANNES	✓	✓		✓	✓	✓		✓	✓
	CASTELLÓN	✓	✓		✓	✓	✓			✓
	PRAGUE	✓	✓		✓	✓	✓			✓
	STAVANGER	✓	✓		✓	✓	✓			✓
Non-EU	BUENOS AIRES				✓		✓			✓
	HONG KONG				✓		✓			✓
	BRAZIL CITIES				✓		✓			✓

1.3 Concept and Methodology

1.3.1 UNaLab Concept

The overall concept of UNaLab is based on the implementation and validation of NBS through ULL demonstration areas in three EU cities, Eindhoven, Genova and Tampere, across distinctly different climate zones (Köppen classifications *Cfb* Temperate Oceanic, *Csa* Warm Mediterranean, and *Dfc* Cool Continental/Subarctic, respectively). Identified common urban climate- and water-related challenges will be addressed using a suite of co-created NBS coupled with user-friendly decision support tools, smart ICT implementation and innovative business and finance models to yield practical actions resulting in measurable improvements in urban ecological water management in the face of climate change (*FIGURE 2*). The consortium includes both EU and non-EU follower cities facing climate and water related challenges similar to those of the front-runner cities. Follower cities will work in collaboration with front-runner cities to develop individual NBS roadmaps using a co-creation process engaging local stakeholders.

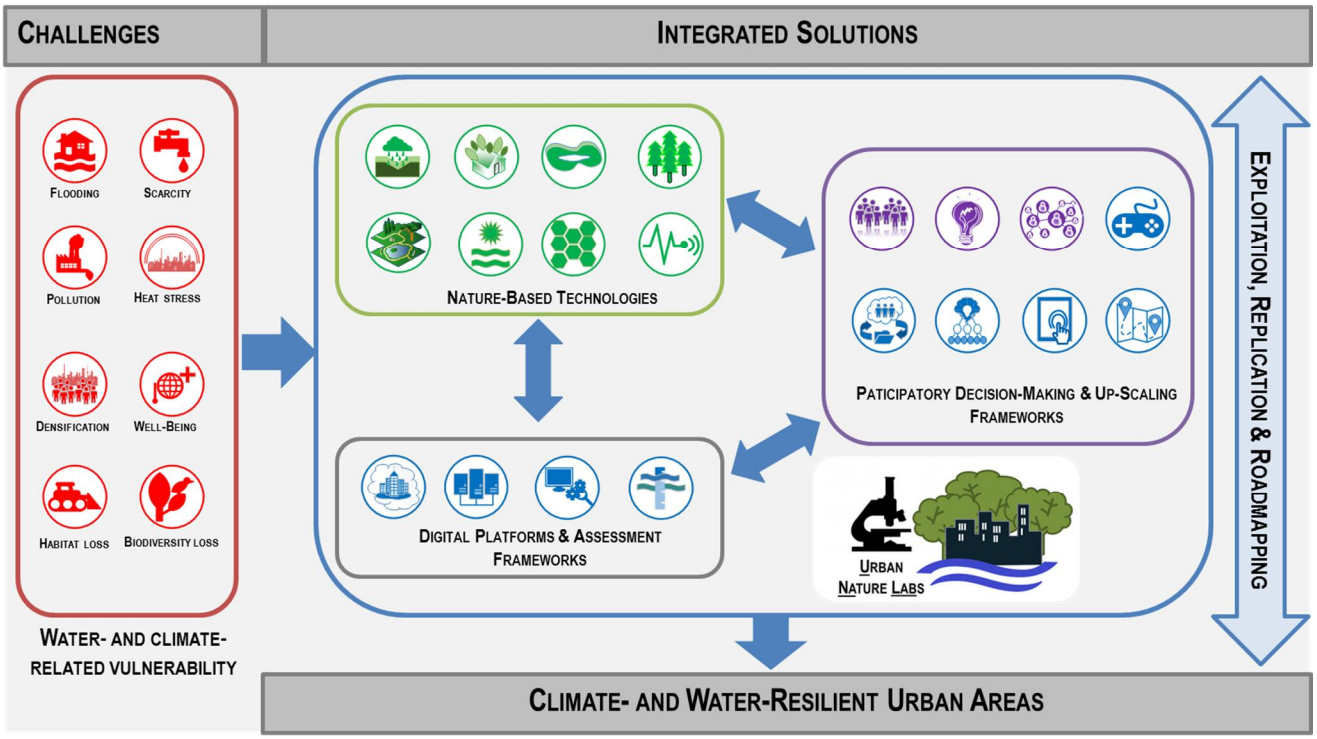


FIGURE 2. OVERALL UNALAB CONCEPT

The UNaLab ULL demonstration areas and UNaLab roadmaps will contribute to a feedback process leading to a widely applicable toolbox of instruments for cities across Europe to engage in nature based co-creative design and implementation and stakeholder-based roadmaps, all of which are marketable beyond the EU. The fundament of the project is formed by the combined use of several proven, complementary methodologies which provide a holistic transformation process to climate- and water-resilient urban areas (*FIGURE 3*). The UNaLab transformation process will implement continuous interaction between front-runner and follower cities to support parallel efforts throughout the project. As front-runner cities engage in EASW and ULL training and implementation follower cities will largely focus on NBS roadmap development and adoption, but will closely follow the EASW / ULL training and implementation process. All UNaLab partners will jointly engage in communication, dissemination, exploitation and upscaling activities to maximise project impact. The project will build on experience and outcomes of previous EU programmes (e.g. EASW method) and projects such as Aqua-Add[3], R4E[4], BlueSCities[5], CITYkeys[6], and TRIANGULUM[7].

1.3.2 Overall Approach and Methodology

UNaLab will implement innovative, inclusive, cost-effective models for coordinated implementation and management of NBS in buildings and urban spaces. The dual focus of the project is (i) the establishment of co-created NBS demonstration ULL in the front-runner cities, and (ii) the development of models and tools to facilitate upscaling of NBS in front-runner cities as well as exploitation and replication of NBS in follower cities and elsewhere. To achieve this, UNaLab has seven individual work packages (WPs) which together form a coherent structure to achieve the project's key deliverables.

Front-runner cities will engage in a co-creation process combining the EASW and ULL methodologies, supported by a scientifically-validated SDST for scenario visualisation and simulation modelling. Visions for the future will be analysed to identify key drivers for change and contrasting scenarios will be formulated as input into a series of local co-creation workshops (to be held in the local language). Participants in the local workshops are local citizens, key players from local/regional government, the business sector, and relevant experts. The first co-creation workshop will yield a desired future vision for the

local area as selected by stakeholders during the co-creation process. In a series of two further local workshops, stakeholders of front-runner cities will co-define individual roles and responsibilities as well as timeframes for actions in NBS demonstration areas using back-casting. UNaLab will employ the ULL model to ensure a systematic approach to co-creation by providing training and tools to partner cities, and harmonising the ULL model among cities for cross-fertilisation, replication, and upscaling.

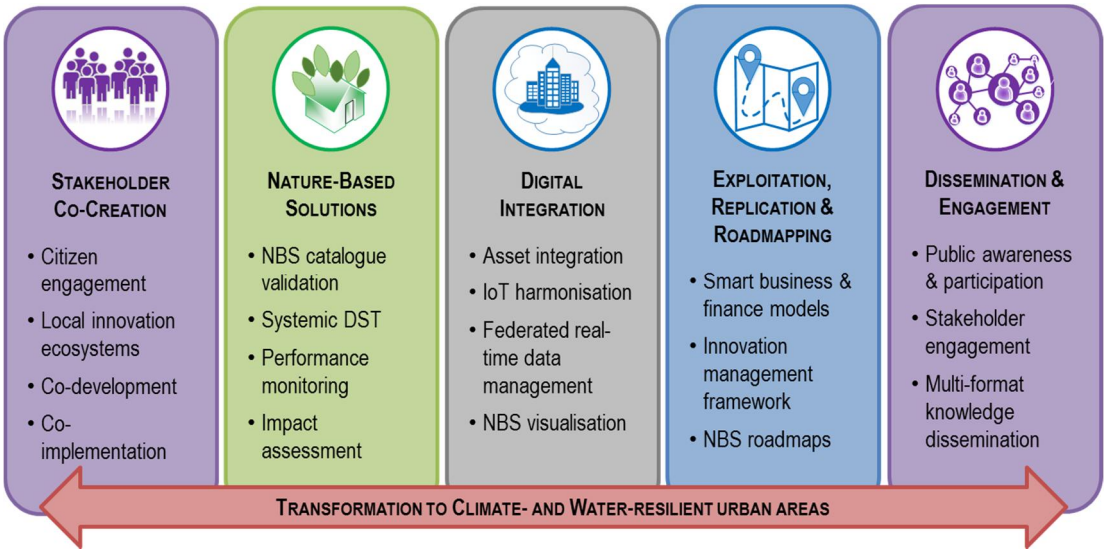


FIGURE 3. PILLARS OF UNALAB HOLISTIC PROCESS

UNaLab will co-implement a state-of-the-art SDST to support flood, drought, pollution and heat risk adaptation planning and management at the urban/regional landscape scale, enabling stakeholders and end-users to be fully integrated in participatory planning of NBS. Making use of touch tables to benefit from powerful geo-visualisation tools in participatory planning, the SDST will allow stakeholders to visualise, assess and discuss potential social, environmental and economic[12] impacts of no-action as compared to nature-based solutions in the situation without (2016) or with (2030 and 2050) climate change. Scenarios will be developed, assessed and discussed with stakeholders at specific moments during the decision-making process, to clarify and validate options and, thus, support an informed decision-making process. The underpinning principle is that NBS will be co-designed, co-developed and co-implemented in a trans-disciplinary, multi-stakeholder and participatory context as well as systemically embedded within urban landscape planning (e.g. urban strategies).

WP1 – Project Management: The project will be managed by VTT in concert with the General Assembly (representatives of all consortium members) and the Executive Board (work package leaders and ULL Managers), in consultation with an Advisory Board comprised of international experts. Close communication will be maintained among consortium members and between the consortium and the European Commission. Regular consortium meetings will be organised and progress in each WP will be carefully monitored to ensure on-time delivery of project outcomes within the allocated budget.

WP2 – Living Lab and Co-Creation Models and Tools: A thorough understanding of the ULL model and EASW method will be employed to integrate these two approaches for effective stakeholder co-creation of specific, locally-attuned NBS and associated models and tools. The ULL model and EASW method will be adapted to the local contexts, taking into account local geographic, climatic, and demographic, gender, cultural and other relevant characteristics. In WP2 a common ULL co-creation and demonstration framework will be developed to create a *European reference experimentation, demonstration and go-to-market framework* for NBS, thereby supporting EU leadership in the NBS global market.

WP3 – Monitoring and Impact Assessment Tools: A monitoring scheme will be co-developed and co-implemented to evaluate both performance and impact of the ULL demonstration NBS, thereby building on key indicators of performance (KPIs) and impact (KIIs) (with WP4). In addition, a systemic decision support tool (DST) will be refined and co-implemented in order to: i) evaluate the expected impact of co-created NBS, and ii) enable stakeholders to visualise, assess and discuss impacts of no-action as compared to NBS scenarios in the situation with/without population growth and/or climate change (with WP2 and WP4). In addition, the effects of NBS on the resilience of front-runner cities to natural disasterswill be evaluated using a "Disaster resilience scorecard for cities", developed based on the "Ten Essentials" defined by the United Nations International Strategy for Disaster Risk Reduction (UNISDR).

WP4 – Data Management Platform and Tools: An integrated work package developing and implementing the use of state of the art ICT solutions based on FIWARE[13] supporting the NBS in the ULL's, including a handbook describing potential NBS, the presentation of a baseline, subsequent presentation of key indicators of performance and impact assessment (including use of

[12] Pascual, U., et al. Pp. 183-256 in: Kumar P. *The Economics of Ecosystems and Biodiversity Ecological and Economic Foundations.* London: Earthscan.
[13] FI-WARE is a middleware platform, driven by the European Union, for the development and global deployment of applications for Future Internet.

WP3's SDST), and the development and agreement of the follower cities' UNaLab roadmaps (*FIGURE 4*). All data will be stored in an open data environment that is able to federate existing open data management systems already provided by front-runner cities as nodes. A UNaLab Open Data node will be also provided within the cloud in order to let front-runner and follower cities without an existing open data management system to join the UNaLab ecosystem.

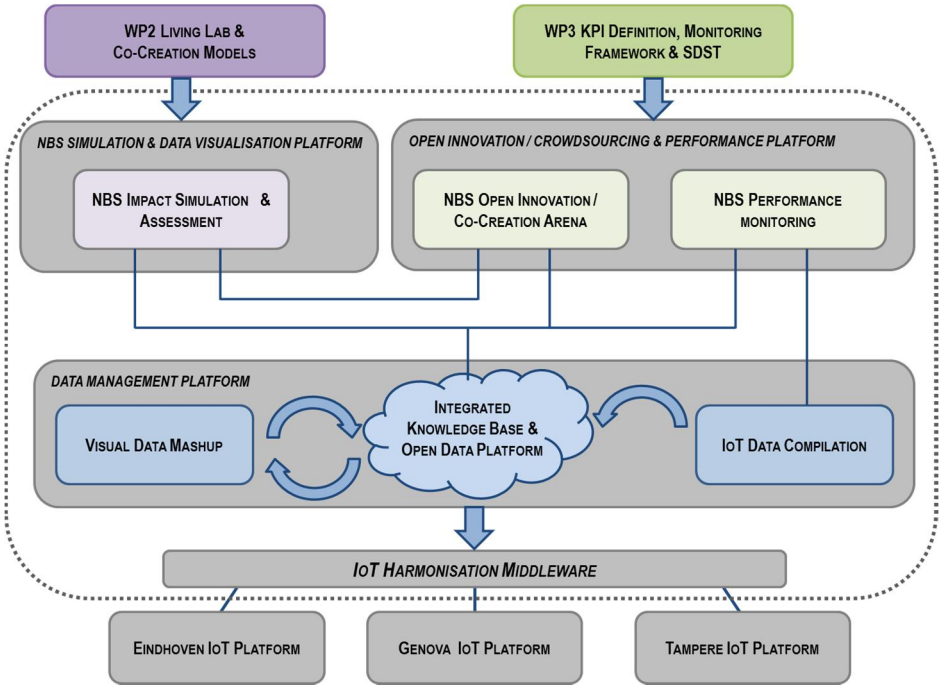


FIGURE 4. WP4 DATA MANAGEMENT PLATFORM AND TOOLS PROVIDE INTERACTIVE LINKAGES BETWEEN NBS INNOVATION, CO-CREATION, PERFORMANCE MONITORING, DECISION-MAKING AND IMPACT EVALUATION

WP5 – Demonstration - Water and Climate Resilient Urban Living Labs: Front-runner cities will engage in inclusive co-creation scenario building process, thereby building on the tried and tested EASW methodology and the ENOLL Living Lab model (WP2) in combination with a SDST (WP3) (*FIGURE 5*). The front-runner cities are located in three spatially distinct geographical regions across three different climate zones, represent cities of three different sizes and, hence, the four co-created ULL areas demonstrate NBS performance and impact in three unique urban environments. An urban ecological NBS Technical Handbook will be developed during UNaLab in an iterative process, providing comprehensive descriptions of individual NBS and integrated NBS systems and their capacity to enhance urban climate and water resilience.

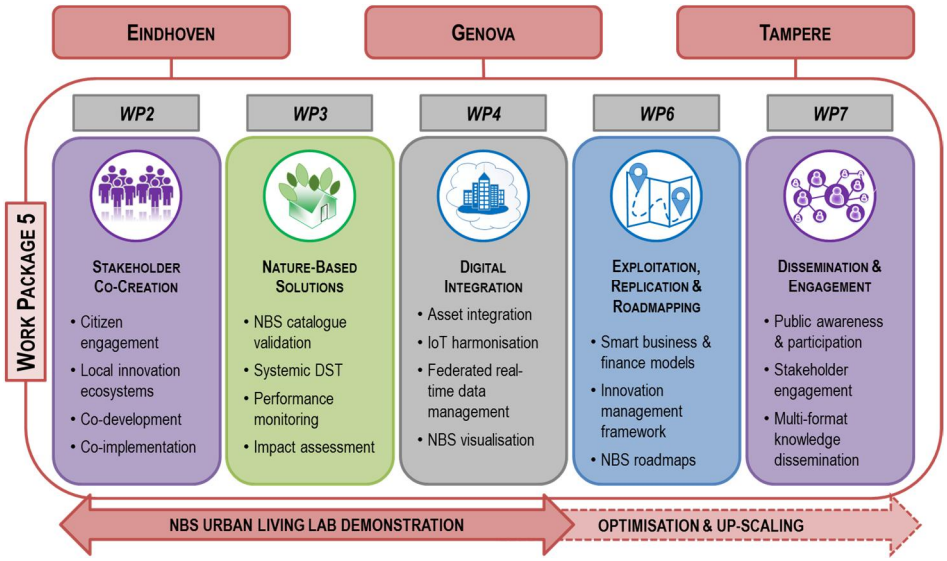


FIGURE 5. UNALAB WP5 URBAN LIVING LAB NBS DEMONSTRATIONS WILL UTILISE, INTEGRATE, OPTIMISE, AND DISSEMINATE OUTCOMES OF WORK PACKAGES 2-7

WP6 – Exploitation, Replication and Roadmapping: A dedicated set of activities, including investment strategies, governance and business models, directed at different target groups focusing on the exploitation and replication or scaling up of the solutions. The focus will lie on the matching of demand and offer. The follower cities will work together with the front-runners in a specifically designed set of activities, including training sessions, workshops, meetings and staff exchange, towards their

individual NBS roadmaps and towards a further toolbox for local governments wanting to use this methodology to create more inclusive nature based strategies.

WP7 – Dissemination and Stakeholder Engagement: With a triple focus on communication within the project, towards stakeholders, and beyond the project towards other cities and private actors. A specific dissemination and communication strategy will be developed for each of these target groups highlighting the project outcomes and deliverables.

1.3.2.1 Gender analysis

UNaLab aims to improve the quality of life of all urban citizens: Women and men of different ages, with different family configurations, employment patterns or socio-economic status. The promotion of gender equity UNaLab project will be achieved through integration aspects in ULL and NBS co-creation and co-implementation methodologies, and the personnel working on the UNaLab project. Research teams will be balanced in terms of gender, in order to address the multiple sex and gender dimensions and complexity of urban planning. Gender issues will be considered in long- and short-term project and planning goals. Gender perspectives will be considered in participatory processes in WP2, WP5 and WP6, creating structures for dialogue between public administrations, private sector, non-profit organisations, and citizens, in which women and men are equally integrated. The language and images used in the project will be appropriate for all stakeholders and gender-sensitive.

The project team is comprised of a balance between female and male experts, and this balance will be demonstrated in VTT's project management team, in the Executive Board (WP Leaders and ULL Managers), and in UNaLab's Advisory Board. It has been shown that gender influences consideration of information prior to investment decisions, negotiation on the basis of that information, and decision-making to optimise the cost of the initial investment with regard to environmental issues. It is therefore clear that the role of women in the project will be an asset for the promotion of urban sustainability. UNaLab is acquainted with the European policy of equal opportunities for women and men and will focus its attention on ensuring gender balance whenever possible. Specific actions will include maintenance of gender equality by the Project Management Board of the project (i.e. equal consideration to the life patterns, needs and interests of both women and men) and the promotion of flexible working-time arrangements among participating organisations for men and women to reconcile work and private life wherever possible, not interfering in terms of income and career perspective.

1.3.3 Front-Runner Demonstration Cities

In front-runner cities, the overall urban strategies are complemented by local operational plans for selected areas in the cities concerned. The innovative UNaLab approach functions concomitantly at both strategic and operational levels, whereby high-level strategies and focused operational plans inform one other. This approach is characteristic of a dynamic governance model, inter-sectoral and interdisciplinary cooperation, and co-creation with stakeholders. The co-creation process will focus particular attention to building a dynamic, sustainable local/regional governance system. The goal of the governance system is not only to facilitate realisation of the desired future vision, but also to ensure a vital economic system to support further development and continuous innovation. The common approach by all front-runner cities optimises joint and cross city learning.

1.3.3.1 Eindhoven, The Netherlands

The City of Eindhoven is the central urbanised hub within the Brainport high-tech region in the South-East of the Netherlands, known as a centre of innovation, ICT, knowledge and design. Eindhoven is facing serious challenges due to rapid population growth, from 220 000 in 2014 to an estimated 300 000 by 2030. Critical issues for the city which are exacerbated by climate change include flooding, urban heat stress, air pollution, and lower quality of life. These issues are addressed by key municipal strategies including Eindhoven's mobility plan ("Eindhoven op weg"), inner city development plan ("Binnenstadsvisie") and climate adaptation plan ("Klimaatplan"). Nature-based climate change adaptation measures play a central role in these strategies and, hence, require the integration and careful articulation of measures across municipal plans. Suites of nature-based flood mitigation measures (including daylighting of rivercourses, and implementation of green space flooding areas and retention ponds) need to be planned and managed using a systems-based approach to maximise benefits from their multiple functions, services and values.

An essential link missing from Eindhoven's key municipal strategies is achieving a climate-proof city centre. Several locations within the Eindhoven city centre with different characteristics have been selected to comprise the NBS demonstration ULL in Eindhoven (*FIGURE 6*). The focus of NBS demonstration in Eindhoven will be the integration of blue (water) – green (flora) – grey (built environment) infrastructure to provide a safe and pleasant living environment for the citizens consistent with the City's vision for 2050. At present, most of the selected areas are almost fully paved. They will all be transformed into greener, more attractive spaces. Some of the NBS transformations will be limited to public spaces whilst others will include transformation of private buildings as well. The aim is to inspire owners of other building owners to implement similar transformations. Blue areas shown in *FIGURE 6* denote watercourses to be daylighted (e.g. the Gender River), brown areas represent demonstration areas for re-greening and/or refurbishment of the building facades and roofs, and green areas indicate public green spaces, stormwater infiltration zones and other as-of-yet undefined innovative water management solutions.

NBS implemented at the locations indicated in *FIGURE 6* will address multiple challenges, namely: aesthetic value (areas are largely paved, lack green space, buildings are unattractive); deficiencies in urban water management; diminished air quality due

to heavy traffic in the city centre; and, higher average temperatures (urban heat island effects, UHIE) affecting the areas' liveability. To date, through an intensive participatory process involving all relevant stakeholders the City of Eindhoven has sought to address climate- and water-related challenges through several projects aiming to make the city centre more climate resilient, attractive, liveable and re-natured. UNaLab will leverage existing initiatives in the City of Eindhoven to solicit stakeholder participation in NBS co-creation and co-implementation. A key partner is the G-1000 initiative which culminated in June 2016 with engagement of a group of 400 randomly-selected citizens in intense dialogue and co-identification of the top priorities in order to achieve a greener and more sustainable city. Eindhoven will continue to work closely with and build upon this citizen-driven initiative.

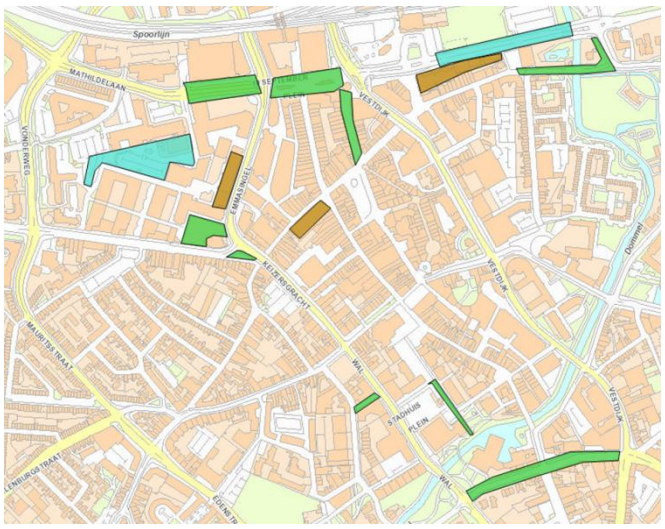


FIGURE 6. LOCATION OF NBS DEMONSTRATION ULL NEAR EINDHOVEN'S CENTRAL STATION

During the UNaLab project entrepreneurs, together with other stakeholders as well as the municipality, will engage in collaborative dialogue to co-create and co-implement NBS, redesigning urban landscapes to create attractive, nature-based, and climate-adapted ULL demonstration areas. This collaborative approach is currently being tested in Eindhoven in a related urban renewal project. Since March 2011, the City of Eindhoven has worked towards a "future resilient city" centred on the Municipality's "Sustainability and Climate Policy", which has four key pillars: climate resilience, quality in the built and living environment, corporate social responsibility and sustainable mobility. Further support for improved climate and water resilience is provided by the Urban Water Plan, approved by the City Council in October 2014, which aims to contribute to Eindhoven's climate resilience through water-related actions such as daylighting of the Gender River. On-going projects and initiatives highlight the involvement and commitment of the municipality of Eindhoven to becoming a sustainable and smart city through widespread implementation of NBS. These projects and initiatives will serve as important input to the NBS demonstration ULL in Eindhoven within the UNaLab project. The City of Eindhoven has committed to invest a total of € 6,7 million in the regeneration of the city centre of which € 3,8 million will be directly related to NBS implementation in order to transform the city centre into a climate resilient, nature-based zone.

1.3.3.2 Genova, Italy

Genova is plagued by frequent flooding which has resulted in significant destruction in the past, primarily due to intense rainfall on a highly urbanised landscape. The city faces numerous environmental challenges relating in particular to extreme weather conditions, water management issues, heat stress, and water and air pollution. Nature-based solutions to key climate- and water-related challenges will be demonstrated in Genova's Lagaccio district, a central and densely populated (>14 360 inhabitants/km^2) district characterised by disorganised post-war urbanisation mainly formed by residential multi-storey buildings and derelict sites. The Lagaccio district occupies a core area of Genova, connecting the old port, the historic town centre and the 850-ha Peralto natural park with is historical architectural structures.

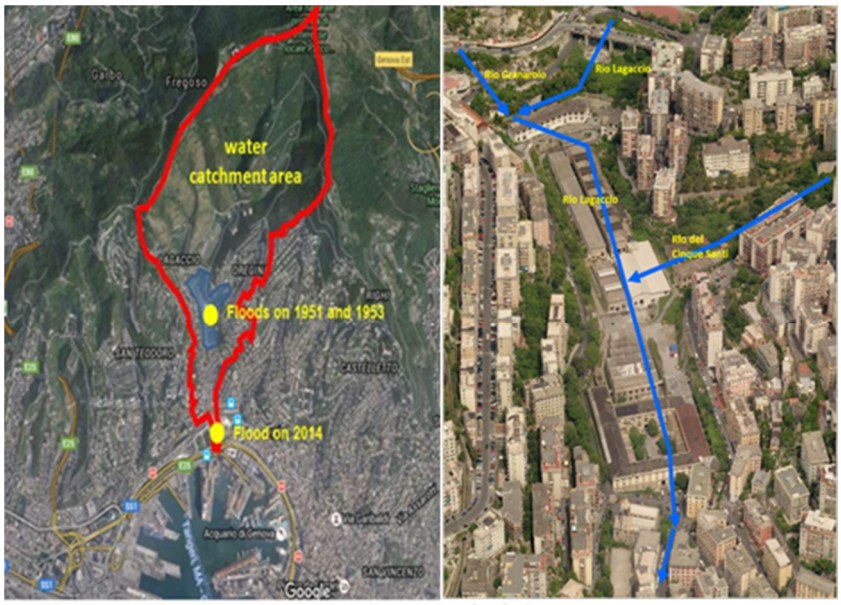


FIGURE 7. CATCHMENT AREA AND LOCATION OF UNDERGROUND RIVERS IN GENOVA'S LAGACCIO DISTRICT

The hydrographic basin of the Lagaccio district is characterised by narrow, steep valleys converging towards the sea, a common situation in Liguria and across Italy that causes waterways to be flood-prone. The Cinque Santi and Granarolo rivers both flow into the Lagaccio River, all of which are mostly underground, covered by extensive urban infrastructure (*FIGURE 7*). This has led to the critical situation we experience today, with the rivers frequently overflowing and causing floods. In the middle of the valley is a former military compound, the Gavoglio Barracks, built over the Lagaccio River and subject of a substantial planned redevelopment project.

Co-created NBS in the Lagaccio district will focus on reducing the incidence and

intensity of flooding in order to prevent water and rain damage, increasing surface permeability, mitigating urban heat island effects, and reducing CO_2 emissions and other air pollution. These actions will address not only climate change, urban water management, and air quality but will also have a positive impact on the quality of life and health of the residents. The Lagaccio district plays an important role in Genova's political strategy and is specifically referenced in the Municipality's Urban Plan which clearly states that the Lagaccio district requires redevelopment. Creating re-naturalised areas within the dense urban zone of Lagaccio will improve the area's resilience to flooding, regulating water flow. New green spaces will be connected to existing green areas which are currently fragmented and underutilised. Connection of green spaces will create a green corridor within which it will be possible to enhance biodiversity and decrease urban heat stress, promoting ecosystem function.

Redevelopment activities envisaged for the Lagaccio demonstration area include: the demolition of 46 000 m^3 and re-use of demolition waste; the creation of 15 000 to 25 000 m^2 of new green space, reforestation and an increase in pedestrian areas; landscape remodelling; separation of stormwater and wastewater flows; and, numerous innovative water management solutions such as partial daylighting of the underground Cinque Santi creek, phytodepuration, and NBS for stormwater management. The Lagaccio district will thus comprise Genova's ULL, providing an example for replication and up-scaling (with other districts of Genova preliminarily identified) by validating the trans-disciplinary participatory, multi-stakeholder co-creation approach as well as NBS technologies. The City of Genova will invest more than € 46 million in Lagaccio district redevelopment to improve the district's climate and water resilience.

1.3.3.3 Tampere, Finland

The City of Tampere's main NBS demonstration ULL is Vuores, a green district to be completed in Tampere by 2030, with residences for 13 000 people and 3 000 to 5 000 jobs. The area is located in the centre of green areas and natural waterbodies, with convenient public transport links to central Tampere. Vuores offers innovative construction and housing solutions and utilises cutting-edge technologies and NBS. The natural environment and its ecological services are an essential part of the area's identity – Vuores is an urban zone adapted to the landscape in order to retain the area's natural character. Construction is underway and there are 2 400 people currently living in Vuores. Thus far, the City of Tampere has invested *ca.* € 100 million in the development of the Vuores smart district and construction of existing stormwater management structures. Innovative, co-created NBS systems demonstrated in Vuores will be scaled up and further developed in Hiedanranta.

Hiedanranta (*FIGURE 8*) is a former industrial area slated for development into a housing area for 25 000 inhabitants and more than 10 000 jobs. It will be a dense urban area conducive to a range of lifestyles given Hiedanranta's proximity to both the lake shore and the tram connection to the Tampere City centre. The planning of Hiedanranta urban development is currently in the initial stages, providing a great deal of flexibility to implement innovative, co-created NBS. Challenges faced include: knowledge gaps regarding the longer-term reliability of NBS solutions in a subarctic climate zone and under changing weather conditions (e.g. changing temperature and precipitation regimes due to climate change), and the long-term maintenance requirements of NBS; temporary storm water management system during the construction phase; and, soil-water interactions or stabilisation of potential contaminants in soils, as the area under development was previously used for industrial purposes.

FIGURE 8. AERIAL VIEW OF TAMPERE'S HIEDANRANTA DISTRICT

Implementation of NBS in Tampere will necessitate: engaging the private land holders of the plots in an innovative co-created stormwater management scheme (e.g. suite of NBS); developing the City's administrative processes with respect to NBS planning, building construction and maintenance; co-creation of the recreational sites (e.g. public green spaces, stormwater pond); adopting infrastructure-based NBS such as green roofs and walls of buildings, permeable pavements, and similar measures; and, developing and validating a real-time water quality monitoring scheme. The measures planned to facilitate NBS implementation include:

- use of a co-creation platform for stakeholder engagement in the planning, implementation, and management phases;
- real-time data interface for optimisation of water systems and data visualisation for informing stakeholders;
- implementing green roof solutions with documented performance in boreal/artic climate conditions;
- use of a continuous water management system in the dynamic construction environment; and,
- creating accessible recreational areas with enhanced floral and faunal biodiversity.

Tampere is a leading city in the Finnish Smart Cities Initiative focusing on smart and resilient solutions in urban environments. In addition, Tampere has recently completed its six-year ecological development programme ECO2, which has been adopted

as the new urban development standard in Tampere, demonstrating the City's strong commitment to achieving ecological targets. The City of Tampere estimates total investment on the order of € 2 million for (re-)development activities focused on improved climate and water resilience, including implementation of co-created NBS, in both the Vuores and Hiedanranta demonstration areas as part of UNaLab.

1.3.4 Replication by Follower Cities

Dedicated UNaLab Replication and Exploitation Managers, FHG and DAPP, respectively, will manage the NBS replication and exploitation process in European Follower cities Başakşehir, Cannes, Castellón, Prague, and Stavanger, as well as Buenos Aires (AR). A strong collaborative network will be established between front-runner and follower cities to enhance EU exploitation, replication and up-scaling as well as the potential for international replication, and to contribute to the creation of a global market for NBS. The follower cities are widely geographically distributed and characterised by differences in culture, urban structure, governance organisation and climate. Their commitment to the UNaLab project ensures widespread dissemination of project outcomes, translation of project deliverables to diverse social and cultural contexts, and the potential for widespread transformative actions utilising NBS to enhance urban climate and water resilience.

UNaLab follower cities will cooperate with one another and with front-runner cities as mentors to co-create detailed local NBS roadmaps, which will be formally anchored in local urban strategies, under the guidance of the UNaLab NBS Roadmapping Manager TU Eindhoven. These NBS roadmaps are the primary deliverable for follower cities within the UNaLab project, and are achieved under the lead of TU/e following an established, validated roadmapping approach. UNaLab follower cities will employ a step-by-step approach, focusing on the creation of a shared vision and agreed procedure to initiate joint activities which spur development and implementation of innovative solutions. Workshops will be conducted in UNaLab follower cities to support each step of the roadmapping process, facilitating establishment of a local/regional community of practice engaging key stakeholders in the development of clearly articulated, comprehensive urban strategies for each municipality. Stakeholder participation is a prerequisite for a durable commitment to long-term cooperation and shared responsibility throughout implementation of co-developed plans. Engagement of key stakeholders in follower cities will be accomplished by applying the Future Telling method, involving thought leaders from various perspectives (economic, social, technological, ecological, and political) to obtain rich visions of potential futures for each urban area.

At the end of the roadmapping activities each UNaLab follower city will have a sustainable urban strategy, consisting of a future image scenario, a roadmap and a handbook describing individual and joint projects to support implementation of co-developed policies and measures concerning innovative NBS.

1.3.4.1 UNaLab Follower Cities

Buenos Aires, Başakşehir, Cannes, Castellón, Hong Kong, Prague and Stavanger face an array of similar climate- and water-related issues to front-runner cities. Buenos Aires' climate and water issues centre on flood control and stormwater management due to the city's location in a low-lying pampas region with year-round rainfall. Stavanger is similarly focused on stormwater and flooding, currently implementing flood mapping and stormwater management using blue-green infrastructure. Integrated stormwater management solutions and community rooftop gardens are some of the key elements of Cannes' current strategy to improve urban living. Hong Kong's recent focus has been on the integration of permeable pavement systems to improve urban drainage and stormwater harvesting to allay seasonal water shortages. Castellón aims to employ a range of NBS in planned landscape-scale integrated urban water management using the UNaLab roadmap. Primary concerns in Prague are stormwater management and urban air quality, which the city aims to address using NBS to enhance the number and extent of green spaces and improve water infiltration. Başakşehir's primary focus is on the implementation of public green spaces and similar NBS to reduce energy consumption and CO_2 emissions, and mitigate climate change effects in the city.

1.4 Ambition

The overall ambition of the UNaLab project is to achieve significant and measurable improvements in the urban living environment and enhance urban resilience to changes in the global climate, through the development, piloting and preparation for roll out of a new urban paradigm through large scale ULL demonstrations, coupled with a robust monitoring, impact assessment and communication system, an effective and innovative co-creation and governance process and strong collaborative links between front-runner cities, follower cities, business and industry partners, SMEs, and a range of related national and international networks.

UNaLab will employ innovative NBS and associated technologies to address challenges concerning city liveability, urban water management and urban ecology resulting from climate change and increased urbanisation.

UNaLab will co-create and co-implement with stakeholders innovative NBS to increase urban blue-green spaces and enhance climate and water resilience, concomitantly addressing technological and economic feasibility, applicable regulations and available business and financing strategies, as well as social and institutional barriers NBS implementation.

1.4.1 Advancement beyond state-of-the-art

UNaLab will amalgamate fragmented evidence concerning NBS and their application, and validate and demonstrate the integration of state-of-the art ecological, technological, and social, governance, business, and management tools, models and frameworks to deliver a suite of market-ready, user-friendly tools for NBS co-design, co-implementation, monitoring and evaluation in urban areas. The innovative character of UNaLab is found in the adaptation and integration of a comprehensive suite of tools to support NBS implementation in urban areas, and their delivery as detailed, readily-applied tools for end-users.

1. *UNaLab establishes a European reference experimentation, demonstration and go-to-market environment for NBS*. UNaLab's trans-boundary NBS demonstration ULL platform stimulates the market for NBS technologies by demonstrating best-practices in the application of integrated NBS and supporting technologies and frameworks to improve cities' climate and water resilience, thereby improving the quality of life for urban citizens. The go-to-market environment for NBS supports further development of a European-led global market in NBS technologies driven by citizen stakeholders.
2. *UNaLab addresses the full spectrum of issues and barriers related to NBS implementation.* Project deliverables include a series of integrated handbooks for end-users to guide: (i) the sociological aspects of a combined EASW and ULL approach to NBS co-creation and co-implementation; (ii) ecological and technological aspects of NBS design, system implementation, monitoring and evaluation; and (iii) management aspects of NBS and ULL implementation, including innovation and data management, and the selection and application of governance, business and finance models. Each of these NBS handbooks will include an evaluation of related barriers to implementation along with mitigation recommendations.
3. *UNaLab's deliverables provide the means for end-users to simultaneously address social, ecological, technological, and economic concerns.* UNaLab's embedded trans-disciplinary approach to enhance urban climate and water resilience facilitates concomitant, iterative NBS system evaluation and optimisation with respect to social, ecological, technological, and economic outcomes.
4. *UNaLab supports development of a single, inclusive NBS-focused community of practice via concomitant use of traditional face-to-face as well as ICT-enabled online modes of stakeholder interaction.* UNaLab's inclusive NBS scenario development process is supported by advanced ICT and data management platforms, enhancing the accessibility of NBS-related knowledge and co-creation tools and supporting the widespread participation of a range of different stakeholders in NBS co-creation, including traditionally marginalised groups.
5. *UNaLab links participatory policy decision-making with the best available science.* UNaLab's application of an integrated biophysical-socioeconomic simulation modelling platform exploits a suite of state-of-the-art biophysical and socioeconomic models supported by local or regional data to provide user-friendly decision-making support.
6. *UNaLab provides long-term impact via clear frameworks and defined pathways for NBS up-scaling and replication beyond the scope of the project.* In addition to user-friendly NBS implementation handbooks, a specific framework for the development of stakeholder based NBS roadmaps for defined action in time and space to achieve the sustainable smart cities of the future supports uptake of NBS technologies and further implementation of UNaLab project outcomes.

1.4.2 Innovation Potential

UNaLab will provide the tools and methodologies, including validated NBS technologies, to enhance urban climate and water resilience and to address inclusive urban regeneration in cities, thereby promoting large-scale NBS deployment and the creation of a global market. The models, frameworks, and NBS technologies which will be utilised in UNaLab are largely available at present, and have been implemented and validated individually. UNaLab will systematically integrate and optimise these elements and critically evaluate the currently fragmented evidence concerning NBS efficacy to devise a comprehensive guide for NBS implementation to enhance urban climate and water resilience.

The UNaLab innovation action will generate a robust, EU-wide evidence base and develop a European reference framework on NBS for regional and local authorities, communities, enterprises and other stakeholders about the benefits, co-benefits, cost-effectiveness and economic viability of NBS. The innovation process within UNaLab comprises a series of strategic steps, moving from the active engagement of stakeholders in goal-setting and planning NBS for improved urban climate and water resilience, through the co-implementation, monitoring and evaluation of co-created NBS concomitant with innovative models of governance, to the co-development of replication roadmaps and strategies, communication of outcomes and further stakeholder engagement (*FIGURE 9*).

1.4.2.1 The replicability and market potential of the NBS

The application of NBS within an urban context is a challenge for the improvement of resilience and climate conditions of urban areas with sustainable, cost effective and flexible alternative. The project will employ ULLs to demonstrate innovateive ideas and will, in parallel, develop urban UNaLab roadmaps according to set procedures and systems. The validated technologies and processes will be highly replicable due to their standardisation and testing in front-runner cities in cooperation with a diverse group of follower cities, as well as the input from at least 45 cities outside the project through regional, national and international networks and the development of a UNaLab Network of NBS Cities (*FIGURE 10*). Monitoring of NBS-based KPIs and critical evaluation of KIIs will drive development of guidelines for replication of NBS within other European cities and elsewhere globally.

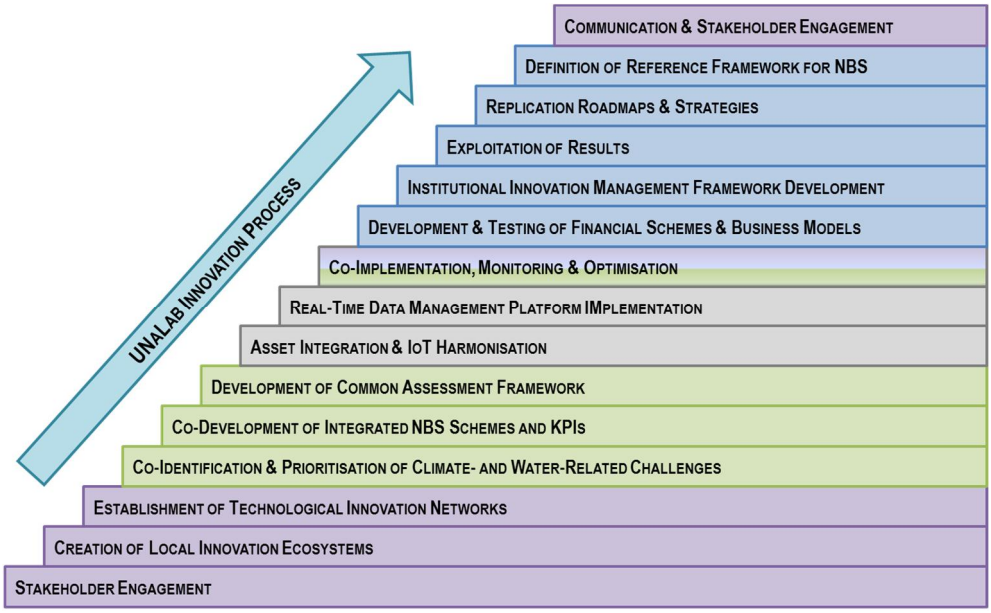


FIGURE 9. UNALAB INNOVATION STAIR

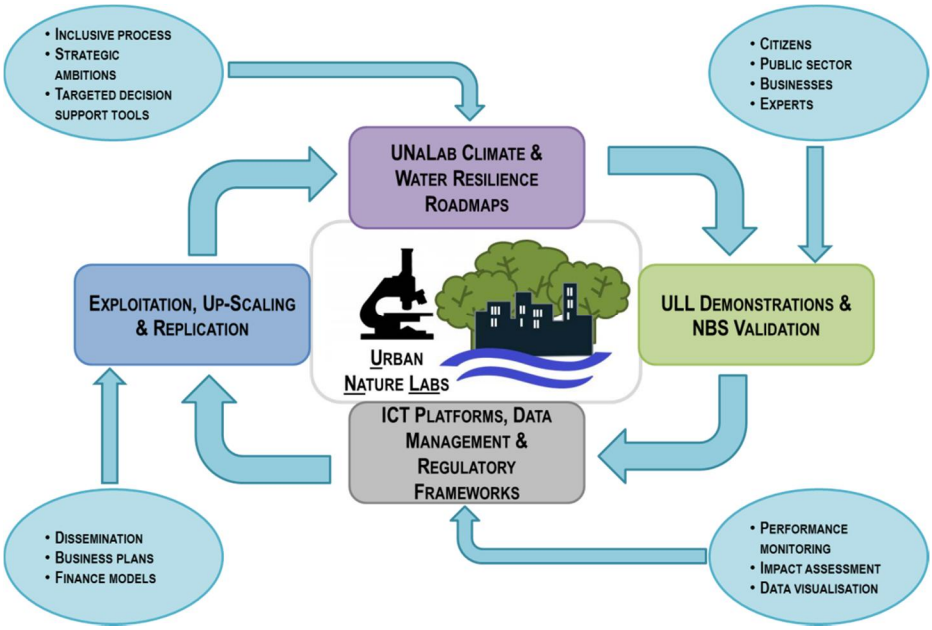


FIGURE 10. UNALAB'S ITERATIVE APPROACH TO ENHANCE NBS REPLICABILITY AND MARKET POTENTIAL

2. IMPACT

2.1 Expected Impacts

2.1.1 Overall Impact in Relation to SCC Call

The contribution of UNaLab to expected impacts outlined in call SCC-02-2016 is summarised below in *TABLE 5*.

TABLE 5. WORK PROGRAMME SCC-02-2016 EXPECTED IMPACT AND UNALAB CONTRIBUTIONS

SCC-02-2016	CONTRIBUTION OF UNALAB
• *"...in the mid-term, the creation of an European reference framework and the establishment of EU leadership in a new global market (offer and demand) for nature-based solutions, new economic opportunities, new products, services, protocols and standards,*	UNaLab will provide quantitative evidence of NBS efficacy, applicability, and cost-effectiveness, including a series of three comprehensive handbooks for end-users to guide the development and implementation of scientifically-validated NBS schemes and related support systems/frameworks in urban areas. Whilst ULL demonstration NBS will provide evidence of technical viability (WP5), smart business and finance models devised in UNaLab (WP6) will provide a basis for leveraging of investments to generate new economic opportunities including new jobs, products, and services. Innovative models of governance (WP6) developed during the UNaLab project will demonstrate mechanisms to reduce

leverage of investments, reduced regulative and administrative barriers, and new local green jobs"	regulatory and administrative barriers and/or implement new protocols and standards at the municipality level. UNaLab deliverables will include: a handbook of technical specifications describing NBS application and efficacy in different urban landscapes and climate zones, including validated performance criteria; a handbook detailing governance frameworks, innovation and data management, and investment guidelines for local authorities with descriptions of innovative business and financial models to stimulate urban deployment of innovative NBS for climate and water resilience; a handbook and associated toolbox to guide NBS vision development through a combined EASW and ULL approach, and roadmapping strategies for sustainable urban development, including identification of potential social and cultural barriers and recommended mitigation strategies; and, a trans-national NBS demonstration and support network, in cooperation with outputs of other SCC 2 projects, SCC 03 project(s) and the ERANet SCC 04.
• *"...increased awareness of the benefits of re-naturing cities, creation of 'communities of practice', more effective policy making and better informed decision making across Europe based on an EU-wide evidence base regarding efficacy, efficiency and comparative advantages of a range of tested, well documented, up-scalable and marketable nature-based solutions"*	UNaLab will substantially increase community awareness through the planning and establishment of NBS demonstration ULL in partner cities. A broad range of stakeholders (citizens, community groups, businesses, industry groups, SMEs, public bodies, and local/regional and national networks will be involved in NBS co-creation and co-implementation (WP2). Dissemination activities will engage a broader stakeholder network, directly or indirectly, through knowledge sharing and demonstration activities centred on implemented ULL (WP8). UNaLab will build business ecosystems with partner companies through workshops in EU front-runner and follower cities. This will support industry and SMEs to enhance green business capacity (WP2 & WP6). UNaLab decision-making support tools (WP3) will seamlessly integrate a suite of biophysical and socioeconomic models supported by local7regional data to provide user-friendly decision-making support, linking participatory policy decision-making with the best available science. In addition to ICT-enabled SDST, UNaLab will generate an business and finance models/frameworks, and effective models of governance which will be compiled in a summary document including strategic recommendations for successful NBS implementation in urban areas (WP5). UNaLab's EASW (WP2) and NBS roadmapping (WP6) processes will effectively combine long-term vision with near-term action while ensuring engagement of key stakeholders. Both outcomes of EASW and roadmaps focus political aims and are geared towards tangible improvements through both long-term vision and realistic ambitions as milestones. The SDST for flood, drought, pollution and heat risk adaptation planning and management at the urban/regional landscape scale (WP3) facilitates increased awareness through systematic documentation of information, provision of scientifically-validated evidence on practices (e.g. scenario simulation and monitoring results) and lessons learnt (e.g. project handbooks and reports) regarding the deployment, cost-effectiveness (including benefits and co-benefits) and performance of NBS. UNaLab will implement strategies for effective widespread dissemination and communication of project aims and outcomes as a key feature of community and stakeholder engagement (WP7). The project will bring together and present, through various modern ICT-based media, the experiences with the solutions implemented and the processes used, as well as actively engage those interested in debates on the sustainability potential of their local community. Widespread dissemination of outcomes in scientific literature will be ensured via granting of Gold Open Access for all UNaLab publications in journals. UNaLab will maximise impact by exploiting existing networks and clustering with other projects financed under the "Nature-based solutions for territorial resilience" part of the call for Societal Challenge 5 'Climate action, environment, resource efficiency and raw materials' to optimise collaboration, synergies, interactions and mutual support to the achievement our corresponding objectives and, if possible, under other relevant parts of Horizon 2020. Involvement of

	significant topical networks (EIP-SCC, ERRIN, ENoLL, Covenant of Mayors for Climate and Energy, etc.) will further serve to increase NBS awareness (WP7).
• *"...enhanced stakeholder and citizen ownership of the solutions through their effective and systematic involvement in participatory, trans-disciplinary and multi-stakeholder consultation processes for co-design, co-development and co-implementation of visionary urban planning"*	UNaLab will ensure the active participation and engagement of citizens and other stakeholders in the processes of vision development, NBS design, decision-making, and NBS implementation as ULL demonstrations (WP5). The EASW process (WP2) also defines the roles of citizens and other stakeholders in the maintenance of NBS following co-implementation. EASW is particularly suited to encourage dialogue and stakeholder participation and facilitate local sustainable development. UNaLab will demonstrate how application of the EASW leads to a shared vision of citizens and stakeholders concerning why, how and by whom NBS will be designed, implemented and maintained. The ENoLL ULL approach, based on a systematic user-centred co-creation process where research and innovation are integrated in real life communities and settings, continues and strengthens stakeholder engagement. UNaLab will co-create and co-implement NBS demonstration ULL in front-runner cities (WP5), conferring a sense of ownership to all local stakeholders involved in the consultative, trans-disciplinary co-creation process. UNaLab will stimulate the formation of local communities of practice (COPs) including NBS-practise oriented consultants, industries, contractors, managers and SME's.
• *"...increased international cooperation and global market opportunities through replication of approaches and solutions in non-EU countries, including in the context of the EU-China platform"*	UNaLab will create market opportunities in rapidly developing regions of the world, with specific focus on South America and south-east Asia, through the participation on non-EU follower cities (WP6). The participation of Buenos Aires and Hong Kong, as well as Guangzhou and the Network of Brazilian Intelligent Cities (WP6) enables the ready translation of UNaLab outputs to both the South American and Chinese contexts. South America and China are areas of rapid urban development and urban densification, with similar climate and water related challenges to UNaLab's EU partner cities. The inclusion of cities representing these regions yields significant market opportunities for EU businesses and industries and provides new visions for urban climate and water resilience via knowledge exchange, e.g. via the EU-China Water platform. Using primarily the worldwide ENoLL network, outputs and results of the UNaLab project will be disseminated to a global audience. The roadmap approach and the collected experiences with NBS will support marketing of innovative UNaLab NBS-related technological, procedural and governance solutions.
• *"...enhanced implementation of EU environmental policies, such as the EU Water Framework Directive, the 7th Environment Action Programme, the EU Biodiversity Strategy to 2020, the EU Climate Change Adaptation Strategy and the conclusions of the COP21 Paris Agreement[3], the 'Blueprint to safeguard Europe's waters' and the 'Communication on Green Infrastructures', and of the Sustainable Development Goals (SDGs) – in particular SDG 11 'Make cities and human settlements inclusive, safe, resilient and sustainable' – and UN conventions in the fields of biodiversity, soil and land management, disaster risk reduction".*	UNaLab will enhance implementation of EU environmental policies by providing tools and technologies, including implementation guidelines, for deployment of NBS to improve urban climate and water resilience. - UNaLab will contribute to the local/regional implementation of the EU Water Framework Directive by providing technical stormwater management and monitoring solutions, and to the EU Biodiversity Strategy by providing multi-functional NBS to re-nature urban areas and restore natural habitats. - UNaLab addresses both climate change and urban development, which are named by the 'Blueprint to Safeguard Europe's Waters' as significant water quality challenges. - UNaLab will validate NBS for flood management, thereby supporting implementation of the EU Floods Directive. - UNaLab closely aligns with the objectives of the European Communication on Green Infrastructures as the focus of NBS implemented in the ULL demonstration sites will be restoration of interconnected blue-green spaces in urban areas and their associated ecosystem services. - The 7th Environment Action Plan (EAP) stresses the need to reduce environment-related risks to health and wellbeing, enhanced citizen access to information, improved investment in environment and climate policy, and full integration of environmental considerations within other policies. UNaLab will demonstrate how to implement these changes in the day-to-day practice of local government. Further, UNaLab supports the EAP directive that cities must become more sustainable and more effectively address climate challenges. UNaLab partners will provide top-down influence via leadership in multiple

	high-level EU and international programmes and networks related to blue-green/blue-green-grey technologies and environmental strategies, including the EIP Smart Cities Innovation partnership, EIP Water, UN Habitat, EERA joint program on smart cities, EU ETV (Environmental Technology Verification) Technical Working Group, European Technology Platform on Water (WssTP), Open & Agile Smart Cities (OASC), European Network of Living Labs (ENoLL), Alliance for Internet of Things Innovation (AIOTI), IoT International Forum, FAO Global Soil Partnership, Finnish Water Forum, and the Finnish smart city network (also see *TABLE 4*).
• *"...creating by 2020 healthier and greener European cities, with increased resilience to climate change (e.g. reduced flood risks, mitigated heat stress) and water-related challenges thanks to the implementation of nature-based solutions, with better living conditions for all, increased green infrastructure and biodiversity, improved air and water quality, reduced noise and health costs, improved mobility conditions, opportunities for urban farming and increased social cohesion."*	The use of NBS to focus on urban ecological water management in response to climate change will effectively create or restore integrated green-blue components with in the urban built environment. Outcomes will include open/public space establishment, increased permeability of urban surfaces/reduced stormwater runoff, biodiversity enhancement via habitat creation, aquatic habitat restoration, and integrated ecological management of multi-purpose urban vegetation. Focus on stormwater management is anticipated to provide substantial benefit to UNaLab partner cities particularly with respect to improved water quality (target: 40% reduction in pollutant loads to receiving waterbodies), and reduced flooding incidence and magnitude (target: >50% reduction). In addition, NBS deployment is expected to significantly enhance urban amenity values, social inclusion, housing values and overall attractiveness of cities, and to improve urban mobility. UNaLab will deliver a number of user-friendly tools to support up-scaling and replication beyond partner cities.

2.1.3 Activities for Achieving Expected Impacts on Work Programme of Call SCC-02-2016

TABLE 6 describes and quantifies, in detail, project activities at the city level for achieving expected impacts and the key outputs of the UNaLab project. Particular attention is given to the requirement "…creating by 2020, through the implementation of nature-based solutions, healthier, culturally diverse and greener regenerated (including deprived districts and neglected or abandoned areas) European cities, with better living conditions for all, reduced crime and security costs, increased green infrastructure and biodiversity, improved air and water quality, enhanced human health and wellbeing, reduced health costs, improved mobility conditions, opportunities for urban farming and increased social cohesion."

TABLE 6. SCC-02-2016 TARGETS AND RELATED CITY-LEVEL KEY OUTPUTS, ACTIVITIES AND EXPECTED IMPACTS OF UNALAB

	ISSUE	ANTICIPATED ACTION(S)	BIOPHYSICAL IMPACT	SOCIOECONOMIC IMPACT
EINDHOVEN	✗ Large paved areas with little or no green space and susceptibility to flooding	✓ Implementation of public green spaces	✓ *Increased permeability of soil (50-90% reduction in surface runoff[14])* ✓ *Reduced urban heat island effect (UHIE; 2-6°C reduction in mean radiant temperature[15])* ✓ *Improved habitat for flora and fauna*	✓ *Improved public amenity value* ✓ *Improved comfort / reduced heat stress* ✓ *Household cost savings - reduced energy consumption due to lower ambient temperatures* ✓ *Reduced risk of flood damage to business or residence* ✓ *Enhanced urban biodiversity*
		✓ (Re-)Establishment of watercourses ✓ Linking of blue-green urban areas	✓ *Significantly reduced runoff to sewers, improved connectivity of urban water cycle* ✓ *Substantial reduction in peak flow during rain events*	✓ *Reduced risk of flood damage to business or residence*
		✓ Preparation of water stockage areas	✓ *Up to 40-60% reduction in surface runoff (dry swale)[14]*	✓ *Reduced risk of flood damage to business or residence*
	✗ Heat stress (urban heat island effect)	✓ Implementation of green roofs / green building facades	✓ *45-60% reduction in volume of runoff from roof / building facade[14]* ✓ *Reduced UHIE (~2°C reduction in mean radiant temperature)* ✓ *40-110% reduction in energy use for heating due to reduced heat loss in cooler months[16]*	✓ *Improved comfort / reduced heat stress* ✓ *Household cost savings - reduced energy consumption due to lower ambient temperatures (summer) & reduced heat loss (winter)*

[14] Battiata et al. 2010, *Journal of Contemporary Water Research & Education* 146:11-21
[15] Oliviera et al. 2011, *Building and Environment* 46:2186-2194.
[16] Susca et al. 2011, *Environmental Pollution* 159:2119-2126

GENOVA	✗ Constrained water flows, notable flood risk	✓ Increase use of Sustainable Urban Drainage Systems	✓ *Linked blue-green grey infrastructure & integrated systems for urban water management has numerous benefits*	✓ *Improved long-term environmental and economic sustainability*
		✓ Increase use of water retention ponds	✓ *Increased stormwater storage capacity* ✓ *Up to 15% reduction in surface runoff volume[14]*	✓ *Reduced risk of flood damage to business or residence*
		✓ Increase use of recreational green areas along the river in urban zones (blue-green spaces)	✓ *Increased permeability of soil (50-90% reduction in surface runoff[14])* ✓ *Reduced urban heat island effect (UHIE; 2-6°C reduction in mean radiant temperature[15])* ✓ *Improved habitat for flora and fauna* ✓ *Reduced runoff to sewers, improved connectivity of urban water cycle* ✓ *Reduction in peak flow during rain events*	✓ *Improved public amenity value* ✓ *Improved comfort / reduced heat stress* ✓ *Household cost savings - reduced energy consumption due to lower ambient temperatures* ✓ *Reduced risk of flood damage to business or residence* ✓ *Enhanced urban biodiversity*
		✓ Increase tree planting	✓ *Reduced CO_2 emissions via biomass sequestration* ✓ *Localised temperature moderation due to shading in summer & blocking of wind in winter[17]*	✓ *Improved public amenity value* ✓ *Household cost savings - reduced energy consumption due to temperature moderation*
		✓ Daylighting of Cinque Santi River	✓ Significantly reduced runoff to sewers, improved connectivity of urban water cycle ✓ Substantial reduction in peak flow	✓ *Reduced risk of flood damage to business or residence*
		✓ Implementation of permeable pavements	✓ Increased surface permeability (45-75% reduction in surface runoff[14]) ✓ Improved aquifer recharge (45-75% increase in water infiltration to vadose zone[14])	✓ *Improved groundwater security* ✓ *Improved comfort / reduced heat stress* ✓ *Household cost savings - reduced energy consumption due to lower ambient temperatures* ✓ *Reduced risk of flood damage to business or residence* ✓ *Enhanced urban biodiversity*
		✓ Reduce garden paving	✓ Increased permeability of land surface (up to 90% reduction in surface runoff[14])	
	✗ Waterproofed / potentially contaminated soils	✓ Demolition of old buildings	✓ *Increased permeability of soil (50-90% reduction in surface runoff[14])* ✓ *Improved habitat for flora & fauna*	✓ *Enhanced urban amenity values* ✓ *Enhanced biodiversity*
		✓ Phytoremediation / phytostabilisation of contaminated sites	✓ *Improved surface and ground water quality* ✓ *Improved habitat for flora & fauna*	✓ *Improved groundwater security* ✓ *Enhanced urban amenity values* ✓ *Enhanced biodiversity*
	✗ Lack of public green space	✓ New green areas including trees, lawns, urban farming	✓ *Increased permeability of soil (50-90% reduction in surface runoff[14])* ✓ *Reduced urban heat island effect (UHIE; 2-6°C reduction in mean radiant temperature[15])* ✓ *Improved habitat for flora and fauna* ✓ *Reduced CO_2 emissions via biomass sequestration* ✓ *Localised temperature moderation due to shading in summer & blocking of wind in winter[17]*	✓ *Improved public amenity value* ✓ *Improved comfort / reduced heat stress* ✓ *Household cost savings - reduced energy consumption due to lower ambient temperatures* ✓ *Reduced risk of flood damage to business or residence* ✓ *Enhanced urban biodiversity* ✓ *Improved food security through urban production*
	✗ Air pollution	✓ Plant trees alongside roads	✓ *Reduced atmospheric particulates, gaseous pollutants*	✓ *Improved health and well-being due to better urban air quality*

[17] McHale et al. 2007, *Urban Forestry & Urban Greening* 6:49-60.

	✗ Soil erosion	✓ Use of permeable surfaces and vegetation ✓ Green-gabions, erosion control blankets, turf reinforcement mat, etc.	✓ *Reduced soil loss due to water erosion* ✓ *Improved soil surface stability* ✓ *Enhanced soil fertility and productivity* ✓ *Improved water and contaminant buffering capacity*	✓ *Improved public amenity value* ✓ *Household cost savings - reduced energy consumption due to temperature moderation* ✓ *Improved biodiversity of flora and fauna*
	✗ Loss of biodiversity	✓ Encourage planting of suitable forage plants in gardens and municipal areas ✓ Retain areas of rough ground or old built structures for nesting habitat ✓ Implementation / protection of public green spaces	✓ *Increased area of habitat for flora and fauna* ✓ *Increased quality of habitat for flora and fauna* ✓ *Increased connectivity of green spaces* ✓ *As above*	✓ *Improved biodiversity of flora and fauna* ✓ *Benefits as above for implementation of public green space*
Tampere	✗ Stormwater runoff quality concerns	✓ Implementation of NBS during construction phase ✓ Implementation of stormwater retention ponds... ✓ biofilters... ✓ & vegetated swales	✓ *Limit off-site transport of surface runoff* ✓ *Reduce runoff transport of fine particulates* ✓ *Reduce risk of contaminant transport from construction site* ✓ *40-80% reduction of surface runoff (bioretention ponds)[14]* ✓ *Nutrient capture (N, P) in biofilters* ✓ *Reduced pollutant load to surface waterbodies and shallow aquifer (biofilters)* ✓ *Reduced particulate load in surface runoff* ✓ *Up to 40-60% reduction in surface runoff (dry swales)[14]*	✓ *Reduce risk to integrity of local aquatic ecosystem* ✓ *Maintain high local amenity values* ✓ *Enhanced biodiversity of flora and fauna (habitat)*
	✗ Stormwater runoff quantity concerns	✓ Integration of residential landscaping with green infrastructure, e.g., rain gardens... ✓ green roofs / walls... ✓ public green spaces... ✓ permeable pavements... ✓ infiltration swales	✓ *Reduced particulate load in surface runoff* ✓ *10-20% reduction of surface runoff (vegetated channel)[14]* ✓ *As above* ✓ *As above* ✓ *As above* ✓ *Up to 50-90% reduction in surface runoff (infiltration swales)[14]*	✓ *Enhanced amenity, biodiversity & stormwater management value* ✓ *Creation of 13 000-15 000 new jobs (Hiedanranta + Vuores)* ✓ *As above + creation of new SMEs to support implementation* ✓ *As above* ✓ *As above + creation of new SMEs to support technology use* ✓ *Enhanced amenity, biodiversity & stormwater management value* ✓ *Enhanced aquifer recharge*
	✗ Potential for loss of biodiversity	✓ Establishment of connected public green spaces (ecological corridor)	✓ *As above for public green spaces*	✓ *As above for public green spaces*

The various impacts of UNaLab for follower cities will largely depend upon NBS implementation beyond the scope of the project. The main outcome for follower cities will be a comprehensive NBS roadmap, closely aligned with each city's respective overall urban development plan to maximise adoption potential and subsequent implementation and up-scaling of NBS systems.

UNaLab project outcomes will be evaluated using key performance indicators (KPIs) identified within the conventional sustainability performance categories People, Planet and Prosperity, and extended to accommodate performance indicators in the areas of Governance and Propagation per the CITYkeys model[18] (*FIGURE 11*). The project KPIs specified herein were selected based on their respective capacity to evaluate the difference the project has made in indicator status, via comparison

[18] Bosch et al. 2016 http://nws.eurocities.eu/MediaShell/media/D1.4-CITYkeys_D14_Smart_City_KPIs_Final_20160201.pdf

of a no-action scenario (prior to UNaLab) with the indicator status following implementation of the UNaLab project. Outcomes may represent a change in knowledge, change in actions, or change in conditions. Many of the longer-term impacts of UNaLab activities are likely to be apparent only years to decades after project completion due to the nature of the science-policy interface and actions involving social and/or institutional change. Project KPIs defined herein will be used to assess short- and intermediate-term outcomes of UNaLab, yielding an assessment of both the quantity and quality of implemented activities:

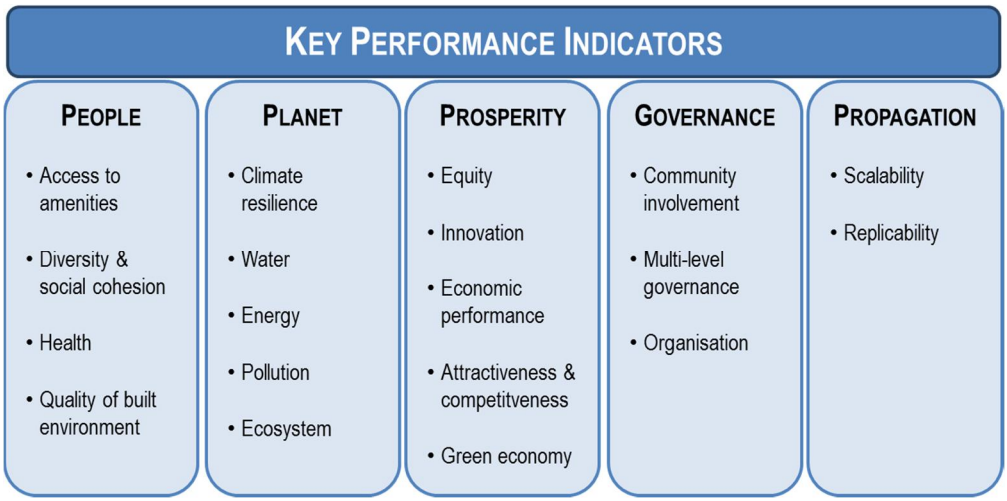


FIGURE 11. THE KEY PERFORMANCE INDICATOR FRAMEWORK (MODIFIED FROM BOSCH ET AL. 2016)

PEOPLE

- Increased consciousness of citizenship and social coherence - the extent to which the UNaLab project has contributed in increasing consciousness of citizenship in participating cities (Likert scale)
- Increased environmental awareness – the extent to which UNaLab has exploited available opportunities to increase environmental awareness, and to provide stakeholders with state-of-the-art information about sustainability and the environment (Likert scale)
- Increased participation of vulnerable groups - the extent to which UNaLab project has led to increased participation of groups traditionally not well represented in the society in participating cities (Likert scale)

PLANET

- Reduction in lifecycle energy use - reduction in life cycle energy use achieved in UNaLab partner cities as a result of the project, calculated as the difference between life cycle energy use of the reference scenario (business-as-usual measures) and life cycle energy use when the UNaLab project is implemented (% in kWh)
- Climate resilience measures - The extent to which climate change adaptation options were evaluated and considered by UNaLab partner cities during the project (Likert scale)
- Increase in green and blue space - Increase of green and blue spaces in partner cities due to the project (% in m^2)

PROSPERITY

- Stimulating an innovative environment - the extent to which the project is part of or stimulates an innovative environment in UNaLab partner cities (Likert scale)
- New start-ups - the number of new start-up companies resulting from UNaLab project implementation (number)
- Improved interoperability - the extent to which UNaLab implementation in partner cities has increased interoperability between community infrastructure (Likert scale)

GOVERNANCE

- Balanced project team - the extent to which the UNaLab project team included all relevant experts and stakeholders from the start (Likert scale)
- Market orientation - the extent to which project activities were planned on the basis of a market analysis (Likert scale)
- Continued monitoring and reporting - the extent to which the progress towards UNaLab project goals and compliance with requirements is monitored and reported (Likert scale)

PROPAGATION

- Ease of use for end users of the solution - the extent to which the tools developed within the UNaLab project are perceived as difficult to understand and use for potential end-users (Likert scale)
- Trialability - the extent to which NBS and associated monitoring networks can be evaluated and optimised on a pilot scale in the local context prior to widespread, large-scale implementation (Likert scale)
- Visibility of Results - the extent to which the results of the UNaLab project are visible to external actors (Likert scale) 2.1.2 Innovation Capacity, Knowledge Integration, & Business Growth and Competitiveness

The UNaLab project will deliver long-term impacts in the form of:

- Change in knowledge – for example, increased stakeholder awareness, new fundamental knowledge (to inform policy), information frameworks for decision-makers;
- Change in actions – for example, through the widespread adoption of new technologies and techniques, application of new skills and information, improved use of stakeholder networks; and,
- Change in conditions – for example, quantified changes in descriptive statistics (property values, etc.), improved urban liveability, improved stakeholder satisfaction, stimulation of innovation networks and associated start-up companies, improved productivity in municipal operations, improved environmental quality (water, air and/or soil), enhanced biodiversity.

UNaLab Project deliverables will be translated to realised long-term outcomes and impacts via the active support of project partners to influence the adoption of UNaLab outputs, as summarised in the impact pathway shown (*FIGURE 12*). UNALAB will contribute to and benefit from relevant international forums and standardisation bodies by leveraging partners' experience and activities in mainstream fora and standardisation bodies. Where relevant, we will interact through complementary channels, including the EIP-SCC, ENoLL, ICLEI, EUROCITIES, the Alliance for Internet of Things Innovation (AIOTI), the IoT Forum, Open and Agile Smart Cities (OASC), the EU-China Water platform, and others.

2.1.4 Contributions to Social Impacts

UNaLab expects to contribute to increased social connectivity in urban areas, first via the co-creation process itself during which local communities of practice will be formed within an innovation ecosystem. Co-creation and inclusivity create a sense of ownership, as well as access to a network of individuals with shared interest in NBS. Following co-implementation of ULLs for NBS demonstration, the increased public green spaces in UNaLab cities will provide a physical space for community members to connect with one another. UNaLab will initiate social connectivity in concert with local governments through inclusive co-creation processes, and support further social community-building by providing pleasant, accessible public spaces.

Implementation of ULLs creates a balanced relationship between environment, technology and society, facilitating local sustainable development while respecting the needs and aspirations of local community members. Deployment of NBS focused on urban ecological water management in UNaLab cities in response to climate change will effectively create or restore integrated green-blue components with in the urban built environment. 'Technical' outcomes will include open/public space establishment, increased permeability of urban surfaces/reduced stormwater runoff, biodiversity enhancement via habitat creation, aquatic habitat restoration, and integrated ecological management of multi-purpose urban vegetation. Anticipated consequences of these improvements in the physical urban environment include, but are not limited to: improved health and well-being of urban residents; increased 'happiness' of urban dwellers; expansion and strengthening of residents' social networks; increased retail activity and expansion of business opportunities; and increased property values in and around areas of NBS implementation. The overall effect will be improved quality of life and increasingly vibrant economies in urban areas.

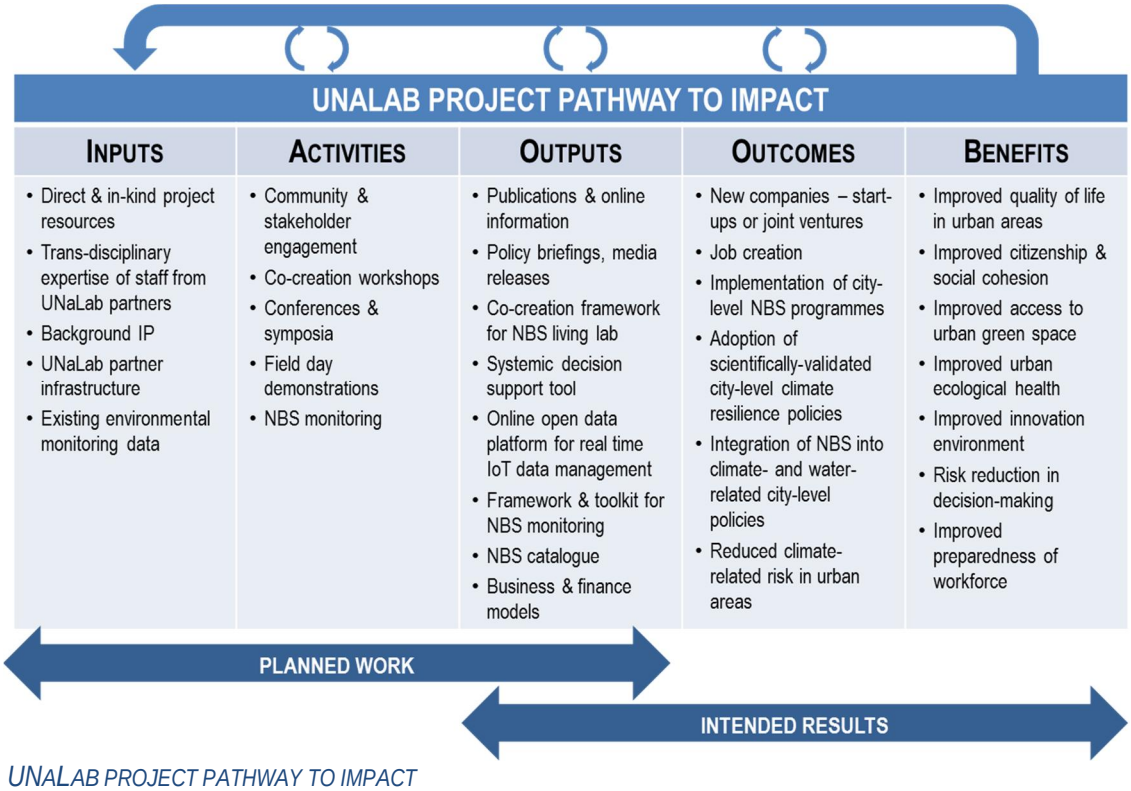


FIGURE 12. UNALAB PROJECT PATHWAY TO IMPACT

2.1.5 Barriers to Achieving Desired Impacts

The adoption of community based approached with participation of local stakeholders for complex topics like climate and water resilience is challenging: there is no 'one size fits all' approach that is suitable in the diverse environments of UNaLab's participating cities. Cities will have different regulatory, economic and social contexts, each requiring adaptation to ensure an effective and efficient collaborative process. The UNaLab project will analyse regulatory, economic, societal, ethical, ecological and technical barriers for the co-creation, co-implementation and adoption of ULLs for NBS from a purposeful activity system perspective in order to overcome these barriers during the UNaLab project and to develop policy and process recommendations for others to overcome such barriers. In this analysis, plans, activities, and results from the complex contexts of front-runner cities will be discussed, modelled, and analysed with the objective to identify relevant actors, transformations sought for, and perspectives influencing the diffusion and adoption of ULL for NBS. UNaLab's barrier analysis will not only ensure that any obstacles encountered during the project are overcome, but will provide a framework for the identification of barriers to ULL and/or NBS implementation and a series of recommendations to overcome barriers in up-scaling and replication efforts.

2.2 Measures to Maximise Impact

Measures to maximise UNaLab's impact will rest upon four pillars: replication, exploitation, dissemination and communication. The UNaLab exploitation strategy will be implemented in conjunction with the project's communication and dissemination strategy. This will ensure that NBS knowledge generated and demonstrated throughout UNaLab ULLs and replication demonstrations will be accurately transferred to the corresponding professional sectors, with an estimated more than 800 000 professionals from urban ecology and water management, urban planning, and ICT in Europe reached.

2.2.1 Replication

The UNaLab Replication Framework will support replication at three different scales:

1. Replication within the front-runner cities as well as between the front-runner cities.
2. Replication from front-runner cities to follower cities through the transfer of best practices, technical knowledge and implementation tools.
3. Wider replication beyond the UNaLab consortium within European cities and through collaborations with non-European follower cities and exploitation of their respective networks to support exploitation beyond Europe.

To ensure the NBS replication within and beyond the UNaLab project, the experience of the front-runner cities NBS will be monitored, evaluated and translated into a practically applicable Replication Framework. The Replication Framework will be based on the co-creation approach which aims to activate innovation ecosystems in cities and initiate co-creation processes, wherein local stakeholders co-create and optimise scalable, cost-effective, locally-attuned NBS for improved climate and water resilience. NBS viability will be ensured by linking with appropriate business and financing models and procurement tools as well as innovative municipal governance approaches essential for NBS uptake. Key elements will include:

1. Systemic decision support tool for flood, drought, pollution and heat risk adaption to facilitate assessment, visualisation and discussion of potential social, environmental and economic impacts of no-action as compared to deployment of NBS given a range of population growth and/or climate change scenarios.
2. Municipal governance guideline to guide processes essential for the modernisation of administrative structures and planning processes in order to include all relevant local stakeholders in NBS planning.
3. NBS Technical Handbook to supply detailed information about a full range of potentially applicable NBS for urban climate and water resilience, including their technical specifications and an assessment of their performance and limitations.
4. Viable NBS business models and alternative financings strategies. The replication potential of the business models applied in front-runner cities will be assessed with particular attention to the identification of complementary funding opportunities available at international, national or regional levels.
5. Delineation of roadmaps at the city level to ensure the alignment of customised future scenarios and the adaptation of NBS demonstrated in front-runner cities with local urban development plans, thus maximising replication potential.
6. Systems Analysis to identify gaps between the desired future vision and the present situation. This analysis facilitates the delineation of roadmaps and selection of appropriate NBS.

In addition UNaLab will seek to appoint city representatives from urban areas other than those already represented in the UNaLab consortium to the project's Advisory Board in order to expland European coverage and evaluate replicability. Study visits by representatives of follower cities and other networked urban areas to NBS demonstration ULL's in front-runner cities will serve as inspiration for replication roadmaps:

- In the framework of the UNaLab Buddy System each front-runner city will mentor two follower cities to ensure maximum exploitation of the front-runner NBS experience. Mentoring partners will be assigned based on the similarities (geographic, climatic, economic, cultural, etc.) between the front-runners and the followers.
- UNaLab plans to establish the NBS Network of Cities which will include approximately 45 cities from Europe and beyond. These cities will be invited to partake in regular exploitation workshops and receive insights directly from front-runner cities. NBS Network cities will also become the primary audience of the UNaLab dissemination activities.

- Exploitation workshops, web meetings and webinars will be held regularly and include front-runner, follower, observer and further cities beyond the consortium to ensure knowledge and technology transfer and maximise the learning curve.

2.2.2 Communication and Dissemination of Results

A coherent and dynamic communication and dissemination strategy will be developed within the first two months of the UNaLab Project. It will make use of innovative and interactive tools and features for communicating with stakeholders and citizens, and for widely disseminating front-runner and follower cities' results to ensure effective exploitation of existing networks, engagement with a broad spectrum of stakeholders, and maintained interest as well as continuous and committed participation by stakeholders.

The project dissemination activities are expected to have the greatest impacts on stakeholders and citizens to ensure that the project outputs can be fully exploited and be the most useful for the EC and Community. The knowledge and information generated and gathered by the project will be easily accessible to all interested stakeholders, including end-users and citizens. The replication-oriented dissemination of results will be effective beyond the planned boundaries and engage a wider community, thus supporting widespread adoption and replication of the UNaLab ULL model.

Communication activities will serve to foster citizen and stakeholder involvement and buy-in, effectively disseminate outcomes from UNaLab front-runner cities, follower cities and the project as a whole, and to support research agenda setting and coordination.

A consistent visual identity will be used for all communication and dissemination activities. A translation service in every participating city is planned to enable the communication of project activities and outcomes in the local language.

The dissemination strategy, to be fully developed and agreed by all UNaLab consortia members shortly after project initiation (M2) and aligned with the project's IPR, data and knowledge management plan, will employ the following sequential steps:

1. Target audience definition - The aim is to support community building by using a targeted approach to relevant stakeholders (e.g. local elected representatives, policy makers and practitioners, citizens, academia), who will be identified in the first month of the project. The target groups will be reached through social networks, digital media, front-runner and follower cities and other partners. The ERRIN, ENoLL and Morgenstadt (FHG) networks will actively implement NBS dissemination activities via websites, workshops and social media tools. To be able to design the communication activities specifically for each type of target audience, GPC will develop a Persona Analysis in the first phase of the project and subsequently structure the content according to the Inverted Pyramid. This approach allows for maximum economies of scale and optimisation of our work while ensuring at the same time the overview of gender and geographical balance.
2. Message definition – specific to each target audience.
3. Selection of appropriate dissemination tools. The website will be the main hub for all the communication and dissemination activities. A range of additional tools and activities will be utilised to target specific stakeholders, e.g. social media, online competitions, promotional tools, flyers/postcards, videos, infographics, and press releases. A range of tools including a UNaLab website, social media (e.g. Facebook, Twitter), online competitions, dedicated promotional tools, flyers/postcards, videos, infographics, media releases, and a regular newsletter will be used to communicate broadly about UNaLab and NBS for improved urban climate and water resilience with a wide audience.
4. Activity planning – including strategic exploitation of UNaLab partners' networks and linking with partners' existing activities for efficient, cost-effective dissemination wherever possible, UNaLab will seek to engage globally in dissemination activities including but not limited to industry trade fairs, exhibitions, conferences and similar forums.
5. Implementation of Dissemination Activities. Additional printed material such as high-gloss thematic brochures, case studies outreach documents and compendia will be used in conjunction with UNaLab presence at industry trade fairs, exhibitions, conferences, and similar fora. Together with local events (in the respective local language), webinars, and a final UNaLab event, these activities will serve as platforms for communication with citizens and stakeholders, researchers, decision-makers, and the general public with respect to UNaLab activities and outcomes

A combination of qualitative and quantitative tools will be used to measure the impact and effectiveness of the dissemination campaign (statistical and anecdotal feedback) and stakeholder participation. Based on these indicators, which will be continuously evaluated, UNaLab will be able to determine throughout the strategy's lifespan the possible shortcomings and adjust accordingly in the strategy updates. Monitoring and evaluation tools that will be used include Regular tracking of the progress of UNaLab Key Performance Indicators (KPIs); analysis of web traffic; event-related statistics.

Open publication channels will be utilised throughout UNaLab to ensure wide dissemination and uniform access to UNaLab outcomes. UNaLab will ensure open access (OA) to all scientific publications including monographs, books, conference proceedings and grey literature (e.g. reports), including at least the possibility to be read online, downloaded and printed, and proactively seeking the maximum additional rights to the public, i.e. right to copy, distribute, search, link, crawl, and mine. OA will be provided via:

- Self-archiving / 'green' OA: manuscripts will be deposited in an institutional and/or subject-based and/or centralised repository of the choice of the author(s). To ensure long-term preservation of the article, self-archiving will be performed

even where open access publishing is used. Repositories which claim rights over deposited publications and preclude access will be dismissed.

- Open access publishing / 'gold' OA: To obtain the maximum impact from OA, UNaLab will make use of 'gold' OA. Primarily RTOs will publish in gold open access journals.

Target Groups - from the beginning of the UNaLab project, the consultation process and associated knowledge transfer at the city level will be central for identifying and involving a critical mass of stakeholders from all target groups. Cities, industry, SMEs, urban planners, public authorities, European national and regional public bodies, decision makers, legislators, financing organisations, standardisation bodies at European and national level, owners, tenants, citizens, consumers are, among others, the main target groups of the project's dissemination activities key players. Stakeholders' and citizen's relation and dialogue will aim to continuously raise awareness and engage new stakeholders from all target groups to:

- Effectively share information among interested parties
- Ensure high level outreach within the community and maintain strong collaboration among the project key stakeholders
- Ensure that the vision, objectives, activities and results of the project become as widely known and understood as possible in order to build consensus and acceptance
- Encourage innovative take-up of results and wide participation by the citizens

At the European level activities addressing stakeholders will primarily focus on EU-based associations, organisations and platforms involving identified target groups through interaction via the EIP-SCC, the Covenant of Mayors for Climate and Energy, the Mayors Adapt Initiative, the Green Digital Charter (GDC), ICT-PSP pilots, the CityProtocol, the Reference Framework for Sustainable Cities (RFSC), the Green Button, the Social Energy Collective, and EU networks such as ERRIN (innovative regions), EUROCITIES (large cities), ENoLL (living labs), CIVITAS, and others. International dissemination efforts will focus on communication via the EU-China Water platform and the Brazilian Network of Intelligent Cities. Detailed plans for disseminating, replicating and exploiting UNaLab's results will be developed around all possible stakeholders who will directly benefit from the projects' achievements. Furthermore, the partnership will actively cluster with and integrate European projects and their results in the field of NBS from e.g. INTERREG, LIFE+, FP 7 and Horizon 2020, notably the SCC Nature Based calls as well as the Smart Cities projects as CITYkeys and the Lighthouse projects.

2.2.3 Exploitation Activities

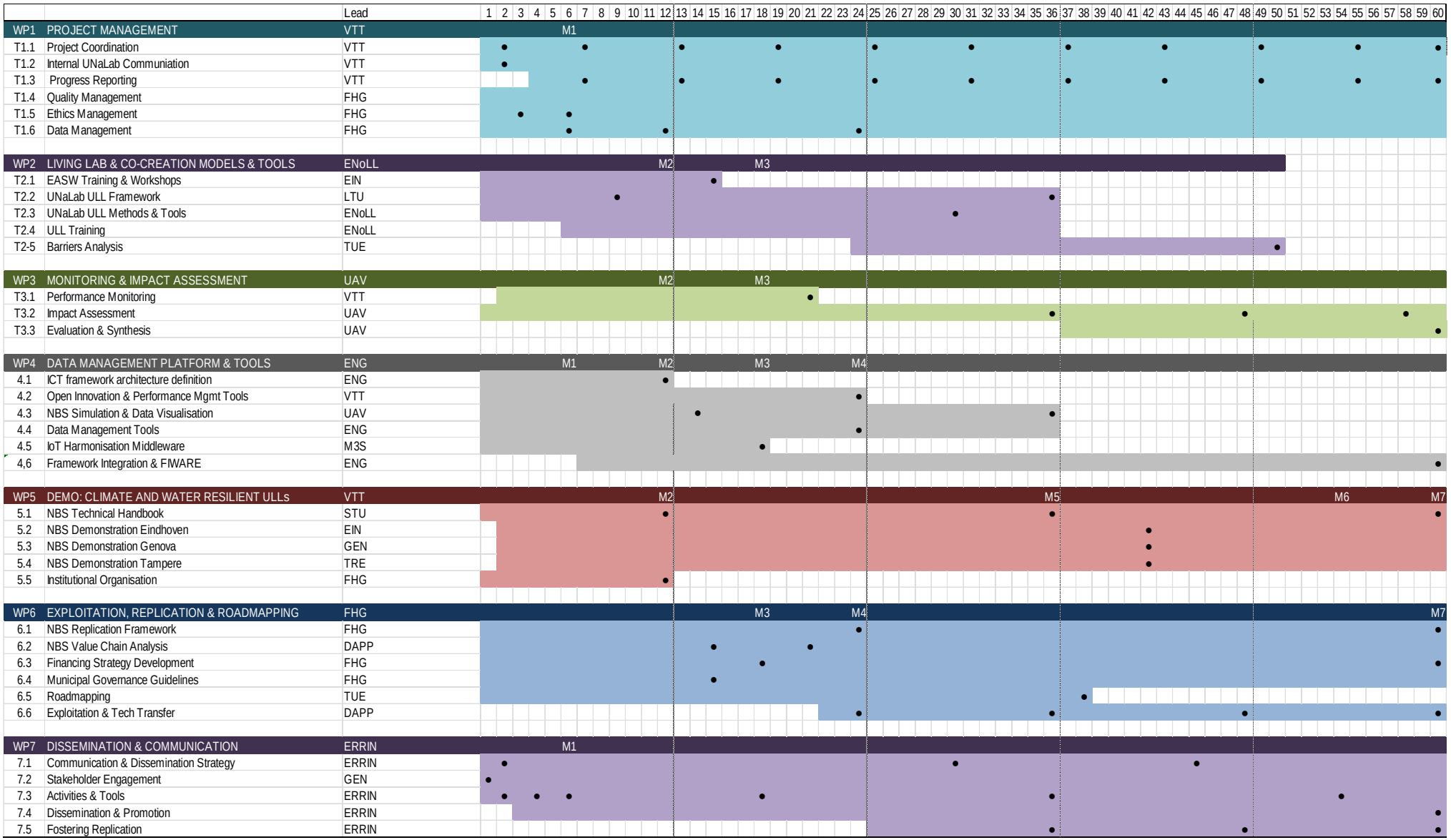
The UNaLab project is generated by the collaboration of public authorities, RTD performers and companies (SMEs and large industries). Exploitation and technology transfer within the UNaLab project will be ensured by the means of regular exploitation and technology workshops where front-runner, follower and non-EU follower cities as well as cities beyond the consortium will take part, leveraging the buddy system which represents formal mentoring of follower cities by front-runner cities. Detailed activities are described in WP6 (T6.6). UNaLab will move byond the promotion and dissemination of results, encouraging the adoption and deployment of NBS systems demonstrated and implementation of the project's recommendations to improve urban climate and water resilience. This will be accomplished generally via the provision of implementation guidelines and recommendations for transferability in UNaLab handbooks. Specific adoption promotion will occur by working with networked follower and observer cities to transfer the knowledge necessary for the cities to develop tailor-made implementation scenarios for the integration of NBS systems into their respective urban development plans.

As the technologies to be integrated in the ULLs are on TRL7 and higher, the majority of solutions in the project have a business plan defined by its companies. The ULLs are huge showcases, with the higher European visibility for the technologies, facilitating the future exploitation of results.

UNaLab results will be evaluated in order to assess the market potential and we will work together with the IPR generators in order to draft exploitation plans. The results with sufficient commercial potential will be examined further in order to explore the intention of the technology developers. Main paths to be explored will be licensing, IPR sale and the creation of spin-offs. In each case, the UNaLab project will focus on clear identification of the targeted customers for the technology, and the subsequent identification of their needs.

3. IMPLEMENTATION

3.1 Work plan — Work packages, deliverables



3.1.1 Work Package 1 - Project Management

WP number	1							Start Date or starting event					M1		
WP title	Project Management							Duration/ending month					60/M60		
WP leader	VTT														
Part. number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Part. short name	VTT	FHG	EIN	GEN	TRE	STA	CAS	CAN	PRA	BAS	ENoLL	ERRIN	LAN	ENG	M3S
PM per part.	26	8	2	2	2	1	1	1	1	1	1	1	1	1	1
Part. number	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Part. short name	RAM	INN	IMP	DAPP	IRE	ESP	PRA	TUE	UAV	STU	LTU	ARU	HON	UBA	
PM per part.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

Objectives:

WP1 will coordinate effort among all consortium partners to ensure an efficient project operation, successful achievement of project goals in the most cost-effective manner, effective communication among project partners and between the UNaLab consortium and the European Commission (EC), and widespread dissemination of results. WP1 objectives are:

- the establishment of management structure and management processes compiled in project guidelines handbook; and,
- the execution of overall coordination ensuring quality management, risk management, financial and administrative management, ethical management, quality management, progress monitoring and corrective actions when needed.

WP1 will ensure that: the project is carried out according to the specified time schedule and budget; the objectives are efficiently achieved; the risks are correctly identified, monitored, and managed effectively; a system is implemented to provide continuous evaluation feedback and on-going project monitoring; the project is managed according to the contract between the UNaLab Consortium and the EC and a continuous link with the EC is maintained; and, overall legal, contractual, ethical, financial and administrative management of the project is carried out.

Description of work

T1.1 Legal and Contractual Management (VTT)

VTT, as project coordinator, will manage the Grant Agreement with the EC and the Consortium Agreement, both to be signed by all partners before the start of the project. VTT will lead discussion on eventual amendments and revisions of these Agreements in case those are necessary after applying the risks/contingency plan.

T1.2 Financial and administrative management (VTT)

VTT will manage all financial issues related to EU contribution and partner's payments, and will advise all partners in order to meet EC administrative and financial requirements. VTT will prepare and agree with all partners Project Management Guidelines to clearly define the project structure and all communication and information flows. These guidelines will ensure that the consortium operates smoothly. The coordinator will provide to the partners all necessary information and guidance in order to ensure that all costs are incurred respecting H2020 rules and provisions.

Task 1.3: Organisation of kick-off and periodic meetings (VTT)

VTT will organise the project initiation meeting which will occur in the project's first month to present the consortium structure, and to nominate representatives for the project Advisory Board. Periodic meetings will be held generally twice per year. All project partners will meet to assess progress on on-going tasks, review next steps, and adjust the work plan accordingly if necessary. The project coordinator assisted by the local partner will arrange the details of the projects meetings (including the agenda) in a timely manner. Also, Review Meetings with EC representatives will be held regularly to allow proper monitoring of the project progress: preferably, one in each of the demonstration sites with others in Brussels. The Review Meetings will take place after the submission of the corresponding Periodic Report in 60 days (as per H2020 rules), that is, at the beginning of the third month after the end of each period. The envisaged planning is:

- 1st Periodic meeting (Kick-off meeting): in month 1 organised by a front-runner
- 2nd Periodic meeting: TBD – Webinar OR Castellón (Spain) in month 7 organised by CAS
- 3rd Periodic meeting: Genova (Italy) in month 13 organised by GEN
- 4th Periodic meeting: TBD – Webinar OR Stavanger (Norway) in month 19 organised by STA
- 5th Periodic meeting: Eindhoven (The Netherlands) in month 25 organised by EIN
- 6th Periodic meeting: TBD – Webinar OR Başakşehir (Turkey) in month 31 organised by BAS
- 7th Periodic meeting Tampere (Finland) in month 37 organised by TRE
- 8th Periodic meeting: TBD – Webinar OR Cannes (France) in month 43 organised by CAN

- 9th Periodic meeting: Genova (Italy) in month 49 organised by GEN
- 10th Periodic meeting: TBD – Webinar OR Prague (Czech Republic) in month 55 organised by PRA
- Final Periodic meeting and Final event: Eindhoven (The Netherlands) in month 60 organised by EIN

T1.4 Internal document sharing system and web page for internal communication (VTT)
An existing web-based system hosted by VTT (e.g. Sharepoint) will be configured for UNaLab and password-controlled access provided to the partners and the EC. The internal communication and collaboration application will be organised to support the communication within project WPs and all management related information including that templates, meeting agendas and minutes will be easily found.

T1.5 Quality Management and Assurance (FHG)
A UNaLab project quality plan (PQP) will be developed in order to ensure project quality management and control, for: management of project-related documentation (templates for minutes of meetings, deliverables, interim reports, costs statements, etc.); monitoring and quality control of project deliverables (internal and external) by means of a peer review process; synthesis of internal procedures for decision-making processes; and, surveillance and approval of milestones. All external deliverables will be reviewed by two representatives of different project partners not involved in deliverable preparation, but who possess sufficient competencies to analyse the consistency and completeness of the deliverable against the expected content. The first version of the PQP will be presented and discussed during the UNaLab project initiation meeting. In the course of the project implementation, the PQP will be updated if required.

T1.6 Ethics Management (FHG)
The activities within UNaLab involve human participants as well as personal data collection and processing. Task 1.6 is designed to ensure the safety, rights, dignity and well-being of participants in research activities involving human participants. Therefore the following activities are planned:

- Appointing external independent Ethics Advisor, who will oversee the ethical concerns involved in this research. A report by an Ethics Advisor must be submitted to the REA with the financial reports.
- Organisation of Workshop on ethical issues with the consortium at initiation meeting (GA meeting 1).
- Ethical approvals for the collection of personal data by the Competent University Data Protection Office or National Data protection authority.
- Development of an internal guideline for involving humans in the research (regarding rights of research participants, informed consent procedures and transparent recruiting process).

T1.7 Data Management (FHG, ALL)
FHG, in close collaboration with all partners, will develop a data management plan (DMP) specifying which data will be open and describe the data management life cycle for all data that will be collected, processed or generated during the duration of the project, as well as specify how data will be shared, curated and preserved after the project is completed. Ethical issues will be addressed in the DMP on the protection of personal data and on humans in terms of defining procedures and criteria that will be used to identify and recruit research participants. The writing and updating of the DMP as well as data management within the UNaLab project will be the tasks of the Data Manager (FHG).

Milestones & Deliverables

M1.1 Project guidelines & data management plan released, internal document sharing & ethics deliverables ready (M6)
D1.1 Advisory Board nominations actioned, financial and technical agreements (VTT) (R, CO, M2)
D1.2 Project guidelines (VTT): Internal procedures for communication, progress monitoring, quality assurance and risk management. Templates and guidelines for presentations, documents, internal status reporting, quality assurance, organisation of meetings and workshops etc. (R, CO, M2) (*Deliverable maintained/updated throughout UNaLab project*).
D1.3 Internal document sharing system (VTT): Web-based collaboration/document sharing system configured for the project and provided to the partners and the EC with password controlled access. (Other, CO, M2)
D1.4 Ethics advisor (FHG): Ethics advisor CV and role description (R, CO, M3)
D1.5 Internal Ethics Guideline for involving humans (FHG) (R, CO, M6)
D1.6 Ethical approvals for the collection of personal data (FHG) (R, CO, M6)
D1.7 DMP - Data Management Plan (FHG): First version of DMP at M6; Revised versions at M12 and M24 (R, CO)
Progress reports (M07, M13, M19, M25, M31, M37, M43, M49, M55, M60) and final report (M60) are not considered deliverables per H2020 rules. These reports are part of WP1 activities, including Ethical Issues, Risk Management and Quality Assurance reports submitted as part of such progress reports.

3.1.2 Work Package 2 - Living Lab and Co-Creation: Models and Tools

WP number	2	Start Date or starting event	M1
WP title	Living Lab and co-creation: Models and tools	Duration/ending month	50/M50

WP leader	ENoLL														
Part. number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Part. short name	VTT	FHG	EIN	GEN	TRE	STA	CAS	CAN	IPR	BAS	ENoLL	ERRIN	LAN	ENG	M3S
PM per part.	0	0	10	6	6	3	3	3	1,5	6	24	0	0	4	0
Part. number	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Part. short name	RAM	INN	IMP	DAPP	IRE	ESP	PRA	TUE	UAV	STU	LTU	ARU	HON	UBA	
PM per part.	0	1	1	3	3	6	1,5	6	12	0	20	0	0	3	

Objectives

The objective of WP2 is to develop a common Living Lab framework, tools and approaches for UNaLab front-runner cities that can be extended and implemented in follower cities and elsewhere, with the objective of creating genuine European reference Living Lab environments. The common Living Lab framework and tools will, through training, enable the cities involved to become ULLs to demonstrate NBS at the European level. This WP provides input and iteratively co-develops content with and for WP5 and WP6.

Description of work

T2.1 EASW Training and Workshops in Front-Runner Cities (EIN, GEN, TRE, LTU) *M1-15*

A series of three workshops will be conducted in the local language in each front-runner city, in a sequence from vision creation through idea generation to implementation measures, with intervals of two to three weeks. The first workshop requires one full day, whilst the second and third workshops can each be completed in one half-day, respectively. Participants (*ca.* 30 per workshop) are carefully selected to ensure a balanced representation of stakeholder groups to provide a realistic microcosm representation of the local citizens, relevant businesses and industries, public bodies, and relevant expert service providers. Each city will have a dedicated EASW facilitator who will receive prior expert training from EIN regarding effective application of the EASW method. Local EASW facilitators will receive training in their local language and the EASW methodology will be adapted as necessary to suit the local culture. A concise portfolio of informative, accessible documents concerning local climate- and water-related issues for effective vision co-development via the EASW method will be provided through WP5 as input to local EASW sessions in front-runner cities. As a result of EASW sessions in front-runner cities, the cities will establish:

- a local community of practice (citizens, relevant businesses and industries, and other stakeholders) committed to the realisation of NBS in ULL pilot demonstrations;
- widespread awareness of climate- and water-related issues and potential NBS among stakeholders, and a common vision of why and how NBS should be implemented and by whom to enhance urban climate and water resilience.

T2.2 UNaLab Living Lab Framework & Principles (LTU, ENoLL, ESP, BAS,DAPP) *M1-36*

A scientific UNaLab Living Lab framework will be developed for use by UNaLab front-runner cities as ULLs based on theories and practises for Living Lab and Action Design Research. This will include planning of the ULL training programme in T2.4 and implementation of ULLs in WP5. The framework ensures enhanced stakeholder and citizen ownership of solutions through effective, systematic involvement in co-design, co-development and co-implementation. The framework will build on existing ULL principles and best practices and will define a common implementation model for ULL environments including Key Components, Key Principles and Key Stakeholders. The framework will also include research approaches for citizen engagement, co-creation, design, test and evaluation in real world contexts with a focus on citizens participating as human actors in the smart city development rather than as factors mainly contributing with data. Training material focused on how to set up and run a living lab will be developed (to be used in T2.4). The final output from this task is a *Handbook for Establishing and Operating Urban Living Labs*, which will be disseminated and exploited both within the project and beyond. The handbook will be developed in an iterative matter building on the experiences in UNaLab.

T2.3 UNaLab Living Lab Methods & Tools (ENoLL, BAS, ESP, LTU, ENG, STA, CAS, CAN,IPR, UAV, UBA) *M1-36*

Both on line and print resources will be developed to support the development of ULLs for NBS in front-runner cities, with particular focus on establishing collaborative co-creation and experimentation methods through the development of training materials, methods and tools. This task will identify, gather and provide relevant methods, tools and online resources for the co-creation, experimentation and demonstration of solutions in real life environments as well as methods and tools for citizen and stakeholder engagement, with a suite of methods and tools to be used in different stages or steps in co-design and co-creation of urban innovations. In addition, material for the Urban Living Lab training programme will be developed and made available in the online repository. Online resources will be hosted by ENoLL and linked to the UNaLab website and resources therein.

Local multidisciplinary, multi-stakeholder co-creation workshops in each front-runner city will be conducted within the first six

months of the UNaLab project to co-develop the UNaLab methods and tools. This task will provide input for the living lab training in T2.4 as well as resources for WP5 (front-runner city ULLs) and WP6 (follower cities, scalability and reliability) and will serve as an online repository of knowledge supporting ULL scaling and sustainability. This task will also align efforts with WP4 (in particular T4.2) delivering some specific open innovation and crowdsourcing tools. Training material will be developed in this task to be used in T2.4 and is thereafter updated and improved based on iterations with activities in the other tasks of WP2 as well as with activities in WP5. The output from this task is training materials as well as an online toolkit of methods and tools for Urban Living Labs.

T2.4 Urban Living Lab Training Programme (ENoLL, LTU, BAS, ESP EIN, GEN, TRE, ENG, INN, IMP,IRE, ESP, PRA, UAV, UBA) *M6-36*

In this task, the aim is to carry out the UNaLab ULL training programme based on framework, methods and tools developed in T2.2 and T2.3 which will enable cities to set up and run their Living Lab, implement effective co-creation and citizen engagement strategies, and support cities in the process of trans-disciplinary, participatory, multi-stakeholder co-creation and co-implementation of NBS. The components of the training programme consist of workshops (in each front-runner city), webinars, training materials (T2.3) and advice from a group of ULL experts. The workshops, webinars and online courses will be based on the UNaLab ULL framework and plan (T2.2) and training materials, methods and tools (T2.3). Experts both from within UNaLab and external to the project will be identified and invited to participate in ULL training sessions. External experts will engage in the project through ENoLL (in-house consulting) leveraging the knowledge of ENoLL's Living Lab network. Similar to Task 2.3 (methods and tools), the ULL training programme will be co-created with UNaLab front-runner cities based on local needs. Local multidisciplinary, multi-stakeholder co-creation workshop in each front-runner city will be conducted to develop a focused, effective ULL training plan. The output of this task is increased learning among city stakeholders on how to set-up and run their own Living Lab and on methods and tools for all phases in ULL activities, as well as a report from training programme activities carried out.

T2.5 Implementation & Adoption Barriers Analysis (TUE, EIN, LTU, BAS, ESP, ENOLL) *M24-M50*

This task will analyse regulatory, economic, societal, ethical, ecological and technical barriers for the co-creation, co-implementation and adoption of ULLs for NBS from a purposeful activity system perspective in order to develop recommendations for policy and processes to overcome such barriers. In this analysis, plans, activities, and results from the complex contexts of front-runner cities will be discussed, modelled, and analysed with the objective to identify relevant actors, transformations sought for, and perspectives influencing the diffusion and adoption of ULL for NBS. To achieve these objectives this task will start with development and definition of detailed process and methods as well as indicators for analysis and to monitor the implementation of the ULLs so to identify barriers to their implementation. This task will analyse the front-runners systems and deploy different measures of performance and boundary questions to ensure that the discussions and analysis is performed with a holistic perspective. These methods and indicators will flow into a coherent methodology that will look into the ULLs' implementation process, its degree of societal inclusion, and the NBS outcomes. Primary data from workshops, discussions as well as interviews with ULL's relevant actors and users will be undertaken in combination with secondary data sources such as project documentation from WP5 and other existing external sources. The outcome of this task will consist of recommendations to overcome identified barriers in the implementation of ULL. The draft of the recommendations will be discussed with policy makers of the front-runner and follower cities.

Milestones & Deliverables

M2.1 UNaLab ULL framework first version developed including plan for training (report, internal; M9)

M2.2 Living Lab training material first version to be used in T2.4 (M12)

M2.3 Development of UNaLab ULL toolkit first versions (online and offline resources; prototype M12)

M2.4 EASW training and co-creation workshops completed in all front-runner cities (M15)

M2.5 Living Lab training first rounds completed (M18)

D2.1 UNaLab ULL framework (LTU) UNaLab ULL framework first version developed including plan for training (R, CO, M9)

D2.2 Report (EIN) EASW scenario building workshop training and co-creation workshops (R, CO, M15)

D2.3 UNaLab ULL online toolkit (ENoLL): comprehensive suite of tools, methods, guidelines and best practises for ULL implementation (Other, PU; M30)

D2.4 UNaLab Living Lab Handbook (LTU): consolidated ULL framework in handbook format (R, PU; M36)

D2.5 Implementation and adoption barriers to ULL for NBS (TUE): Report on implementation and adoption barriers to ULL for NBS, in handbook format, including recommendations to overcome ULL implementation barriers and mitigation strategies (R, PU; M50)

3.1.3 Work Package 3 – Monitoring and Impact Assessment

WP number	3							Start Date or starting event					M1	
WP title	Monitoring and Impact Assessment							Duration/ending month					60/M60	
WP leader	UAVR													
Part. number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Part. short name	VTT	FHG	EIN	GEN	TRE	STA	CAS	CAN	PRA	BAS	ENoLL	ERRIN	LAN	ENG	M3S
PM per part.	19	0	6	6	6	0	0	0	0	0	5	0	0	15	0
Part. number	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Part. short name	RAM	INN	IMP	DAPP	IRE	ESP	PRA	TUE	UAV	STU	LTU	ARU	HON	UBA	
PM per part.	0	9	1	5	6	0	0	2	44	12	0	0	0	0	

Objectives

The overall objective of WP3 is to monitor and evaluate the measured performance and assess the potential impacts of nature-based solutions (NBS) in front-runner cities, using key indicators of performance (KPIs) and impact (KIIs) as well as a systemic decision support tool (SDST) to underpin and support the co-creation of NBS in the face of global change (in particular population growth and climate change). Specific objectives of WP3 are:

- To co-develop and co-implement a monitoring and evaluation scheme that facilitates evaluation of the measured performance and impact of NBS in front-runner cities, thereby building on KPIs and KIIs (with WP2, 4 and 5);
- To co-implement a SDST in front-runner cities that facilitates the assessment, visualisation and discussion of potential social, environmental and economic impacts of no-action as compared to deployment of NBS in a range of population growth and/or climate change scenarios (with WP2, 4 and 5); and,
- To synthesise and quantitatively assess measured and potential NBS performance and impacts, evaluate co-developed monitoring and impact assessment protocols, and identify technological barriers to NBS operation in front-runner cities.

Description of work

T3.1 Monitoring (VTT, UAV, ENG, DAPP, TRE, EIN, GEN, ENOLL, STU, TUE, IRE)

T3.1.1 Co-Identify KPIs and KIIs (VTT, EIN, GEN, TRE, IRE, ENOLL, DAPP, INN, IMP)

Key KPIs and KIIs will be co-identified with local stakeholders, project partners and external experts in a two-stage workshop approach. Within WP3 and in close collaboration with WP5, links with relevant performance measurement frameworks will be established in order to select a suite of KPIs and data collection procedures for consistent, transparent monitoring of NBS with time, and to facilitate comparison of NBS across different locations. The first workshop within each front-runner city will include discussion of the types of performance indicators to be included and will assess the past/current availability, source and quality of identified parameters. At the second inter-front-runner city workshop common indicators will be identified, their validity and completeness discussed, and a final common set of indicators to be used in the monitoring of NBS will be defined.

T3.1.2 Develop a Suite of Defined NBS Monitoring and Evaluation Protocols (VTT, UAV, STU)

The effectiveness of NBS implemented in front-runner cities will be monitored and evaluated using a defined suite of protocols to enable consistent collection and management of NBS performance data during and following the UNaLab project. Monitoring and evaluation protocols will include a comprehensive methodology for the routine measurement of key parameters and evaluation of NBS efficacy based on defined KPIs. The scope of the monitoring and evaluation protocol will be two-fold in order to measure the performance of implemented NBS at the Project level (i.e. demonstration areas) and City level (further scaling and replication inside city and region).

T3.1.3 Establish Pre-NBS Baseline for Relevant Measurable Parameters (UAV, STU, TUE, VTT)

Baseline data will be obtained for a reference period (to obtain a representative 'average' reference year) for each of the measurable parameters relevant to co-identified KPIs and KIIs, using the best available data from monitoring studies, statistical databases, reports, research literature sources and, where applicable, through additional measurement, interviews, workshops and questionnaires.

T3.1.4 Monitoring and Statistical Analysis of KPIs and KIIs (VTT, EIN, GEN, TRE, IRE, UAV)

Continuous monitoring of parameters relevant to co-identified KPIs and KIIs will be undertaken for two years during the UNaLab project. Quantitative and qualitative statistical analyses will be performed to examine the performance and quantify the magnitude of significance of the impact of NBS. Data will be collected using sensors via Internet of Things (IoT) platforms installed in front-runner cities (WP4 to facilitate data collection in a common workspace containing IoT data, defined KPIs and KIIs, NBS process representations and other useful information from legacy ICT systems of front-runner cities. In addition, some of the performances and impacts of implemented NBS will also be assessed with respect to co-defined KPIs and KIIs

using the systemic decision support tool (SDST; see Task 3.2; with WP4).

T3.2 Impact Assessment (UAV, VTT, ENG, DAPP, TRE, EIN, GEN, ENOLL, STU, TUE, IRE)
UNaLab will co-implement a SDST for state-of-the-art flood, drought, pollution and heat risk adaptation planning and management at the city/landscape scale. The SDST will be installed on interactive touch tables (with WP4) to provide powerful geo-visualisation tools for participatory planning, enable stakeholders to visualise and discuss potential social, environmental and economic impacts of no-action as compared to implementation of selected NBS in scenarios without (2015) or with (2030 and 2050) climate change and population growth. The SDST will integrate and build upon data and information from disciplinary models into a spatially-explicit framework at the landscape scale to assess direct and indirect impacts of NBS strategies on flooding, water pollution, urban heating, air pollution, ecosystem services and values, and urban sprawl, real estate values, population dynamics and gentrification. The SDST will be used to assess the potential impacts of NBS in front-runner cities during the lifetime of UNaLab, as well as evaluation of the potential impacts of additional future NBS strategies at the project/city level beyond the lifetime of the project. The SDST will be developed as a user-friendly tool easy to implement in follower cities and beyond.

The following state-of-the-art disciplinary modules are integrated within the SDST to allow impact assessment of NBS, population growth and climate change: NBS technical specifications, via the NBS technical handbook (T5.1); population growth scenarios developed for near-term (2030) and long-term (2050) predictions; climate scenarios selected from global climate projections and downscaled for front-runner cities using the Weather Research and Forecasting (WRF) model to address near-term (2030) and long-term (2050) predictions; the Soil and Water Assessment Tool (SWAT) and Stormwater and Wastewater Management Model (XP-SWMM) to assess potential flooding and water pollution in 2015 and by 2030 and 2050; the coupled WRF model and Surface Urban Energy and Water Balance Scheme model (SUEWS) to estimate energy flows, water fluxes and urban heat island effect (UHIE) associated with the urban land surface scheme in 2015 and by 2030 and 2050; the coupled WRF model and Chemistry modelling system (CHEM) to simulate emission, transport, mixing and chemical transformation of trace gases and aerosols with meteorological variables; the combined CICES methodology and InVEST model to evaluate impacts on ecosystem services and values in 2015 and by 2030 and 2050; the Sustainable Urbanising Landscape Development (SULD) model to evaluate urban sprawl, real estate values, population dynamics and gentrification. Disciplinary models will be parameterised, calibrated and validated using local historical data (various databases) as well as local observed data (from Task 3.1). Simulations will be performed for the reference scenario (2015) as well as for NBS, population growth and/or climate change scenarios (2015, 2030 and 2050). A geodatabase will be created (WP4) containing five sets of data: reference scenario (2015), NBS strategies, population growth scenarios (2015, 2030 and 2050), climate change scenarios (2015, 2030 and 2050) and combined scenarios (2015, 2030 and 2050). End-users will be consulted as to the data/layers to be included in the database. Evaluation of frontrunner cities resilience to natural disasters will be done by filling in the "Disaster resilience scorecard for cities", developed based on the "Ten Essentials" defined by the United Nations International Strategy for Disaster Risk Reduction (UNISDR).

T3.3 Evidence, Process Evaluation and Synthesis (UAV, VTT, TRE, EIN, GEN, ENOLL, STU)
This task will: (i) synthesise the measured (T3.1) and potential (T3.2) performance and impacts of NBS in front-runner cities, and compare these data to evidence from other cities in Europe and beyond (including follower cities); (ii) evaluate and optimise as necessary the monitoring and impact assessment process developed and applied in front-runner cities; and, (iii) deliver a user-friendly framework for co-definition of NBS and application of KPIs, KIIs, and NBS monitoring and impact assessment protocols, which is strongly aligned with EU environmental policies and consistent with applicable Sustainable Development Goals and UN conventions. The result will be a suite of outcomes tailored to the needs of urban end-users in Europe and applicable to urban municipalities worldwide, to be used by front-runner (WP5) and follower (WP6) UNaLab cities and disseminated through WP7. Sub-tasks include:

- Document, synthesise and critically evaluate the measured performance and impacts of NBS established in front-runner cities approaching M60 (based on T3.1) compared to that reported in scientific literature.
- Document, synthesise and critically evaluate the potential performance and impacts of NBS established in front-runner cities by 2030 and 2050 as derived from SDST simulation results (T3.2) compared to that reported in scientific literature.
- Evaluate the monitoring and impact assessment scheme co-developed and co-applied in front-runner cities, using socio-cultural approaches (including questionnaires, interviews and focus groups) to assess the understanding of stakeholders at different stages of the project to map the evolution of stakeholder perspectives on the performance and impact of NBS in the face of global change.
- Critically evaluate and, where applicable, modify the monitoring and impact assessment scheme developed in T3.1 to optimise stakeholder ease of use and cost-effectiveness, and streamline data collection.
- Devise an integrated, user-friendly framework for co-definition of NBS KPIs and KIIs, and for NBS monitoring and impact assessment, strongly aligned with EU environmental policies (e.g. EU Water Framework Directive, 7th Environment Action Programme, EU Biodiversity Strategy to 2020, EU Climate Change Adaptation Strategy, the 'Blueprint to safeguard Europe's waters', and the 'Communication on Green Infrastructure') and consistent with Sustainable Development Goals and UN conventions in the fields of biodiversity, soil and land management, and disaster risk reduction.

Milestones & Deliverables

M3.1 Complete collection of existing 2015 baseline data (VTT) for front-runner cities (M8)

M3.2 Creation of preliminary database of population growth and climate change scenarios (UAV) for front-runner cities (M10)

M3.3 Complete preliminary testing of biophysical NBS simulation results (UAV, using SDST) in co-creation workshops in front-runner cities. Co-identification of KPIs and KIIs with key stakeholders (VTT) in front-runner cities. (M15)

D3.1 NBS performance and impact monitoring protocols (VTT). Handbook of NBS performance and impact monitoring protocols for front-runner cities (R, CO, M21)

D3.2 SDST user guide for municipalities (UAV): Comprehensive, user-friendly SDST step-by-step user guide for municipalities (R, PU, M36)

D3.3 Report on the integrated model refinement for touch tables for public use (UAV), coupling geovisualisation tools and SDST simulation of all parameters for public use in front-runner cities (R, CO, M48)

D3.4 Assessment of NBS Demonstrations (UAV): Assessment of NBS Demonstrations Analysis of measured and potential performance and impacts of NBS on flooding, water pollution, urban heating, air pollution, ecosystem services and values, and urban sprawl, real estate values, population dynamics and gentrification in the face of population growth and climate change (R, PU, M58)

D3.5 Critical review of measured impacts of NBS (VTT): critical review of measured impacts of NBS on flooding, water pollution, urban heating, air pollution, ecosystem services and values, and urban sprawl, real estate values, population dynamics and gentrification in the face of population growth and climate change (R, PU, M60)

3.1.4 Work Package 4 – Data Management Platform and Tools

WP number	4							Start date or starting event						M1	
WP title	ICT framework for NBS co-creation and data management							Duration/ending month						60/M60	
WP leader	ENG														
Part. number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Part. short name	VTT	FHG	EIN	GEN	TRE	STA	CAS	CAN	PRA	BAS	ENoLL	ERRIN	LAN	ENG	M3S
PM per part.	22	0	0	0	0	0	0	0	0	0	0	0	0	88	35
Part. number	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Part. short name	RAM	INN	IMP	DAPP	IRE	ESP	PRA	TUE	UAV	STU	LTU	ARU	HON	UBA	
PM per part.	0	12	1	0	0	0	0	4	7	0	0	0	0	0	

Objectives

The objectives of WP4 are to develop a UNaLab ICT framework that will enable city managers to assess the performance of NBS based on KPIs defined in WP3, and will allow the UNaLab network, comprised of all stakeholders in the project, to organise and visualise valuable data available in the city, to assess the impact of nature based solution through a straightforward front-end that supports decision-making regarding the deployment of NBS as well as the co-creation of NBS through crowdsourcing tools. Specifically, WP4 will:

- Define the detailed architecture of the UNaLab ICT framework, including integration of existing assets from municipalities and consortium partners;
- Tailor the open innovation/crowdsourcing and performance measurement tools to meet WP2 and WP3 requirements;
- Tailor the NBS data monitoring and impact simulation platform according to the features of the SDST (WP3);
- Customise the data management platform in order to organise all data cached in cities in a single federated data management environment accessible through standard APIs;
- Define and tailor IoT harmonisation middleware in order to populate the UNaLab database and allow the definition of mashed-up data;
- Establish and maintain the UNaLab cloud-based FIWARE environment to facilitate the deployment of the UNaLab framework; and,
- Integrate the assets of the UNaLab framework in order to meet the requirements of WP2, WP3, WP5 and WP6.

Description of work

T4.1 UNaLab ICT Framework Requirements Definition and Architecture (ENG, M3S)

This task will match the functionality offered by the range of technical results and components in the area of Open and Collaborative Government support brought forward by the different partners of the project in order to engage stakeholders in the co-definition of ideas related to nature based solution (NBS) and smart cities that can have an impact in front-runner cities and in follower cities, as well as the data management tools that enables interoperability among different IoT platforms and the cloud based FIWARE environment that supports the easy tailoring of the UNaLab framework and lets the as-a-service usage of the UNaLab ICT framework. Taking into account the Living Lab methodology to effectively seek co-creation of nature based solutions defined in WP2 as well as the KPIs and the Decision Support tool back-end defined in WP3, the detailed architecture and requirements of the UNaLab framework will be defined in Task 4.1. The definition of the architecture will be iterative in order to reflect the continuous improvement and refinement of the Living Lab methodology, NBS co-creation approach and KPIs defined in WP2 and WP3.

T4.2 Open Innovation/Crowdsourcing & Performance Measurement Tools (VTT, ENG, M3S, UAV)
This task, taking into account the functional and non-functional requirements regarding Open Innovation and user involvement in crowdsourcing activities and the ULL methodology (WP2), will provide the *Open Nature Innovation Arena* and *City Performance Monitor* platforms. These will be derived from previously utilised assets (VTT and ENG) which will be consolidated/extended with respect to features and functionalities in order to meet UNaLab needs. These tools will serve a dual purpose. First, they will allow all stakeholders to be engaged in proposing NBS ideas and Smart Cities models aimed at improving the quality of life in front-runner cities. Second, these tools will reproduce the co-created NBS for simulation through the NSB Impact Simulator & Monitor tailored within T4.3 to allow measurement of the KPIs defined in WP3 and generation of the performance measures as geographical models/layers in the UNaLab database. The geographical models can be visualised using the NBS Impact Simulator & Monitor in order to enhance understanding of the impact of NBS deployed in front-runner cities. In order to achieve the continuous improvement of open innovation/crowdsourcing and performance measurement tools they will be refined according to feedback from users in front-runner city ULL demonstrations.

T4.3 NBS Simulation & Data Visualisation (UAV, ENG)
Taking into account the requirements and functionalities of the SDST refined and applied in WP3, and ICT framework requirements defined in T4.1, this task aims to develop an *NBS Impact Simulator & Monitor*, i.e. the UNaLab ICT framework platform representing the user interface underlying the SDST defined in WP3 as well as an ICT platform for visualisation of monitoring data and geo-data published in the UNaLab database in addition to datasets produced using the *Visual Data Mashup Creator*. This task will:

- Create a geodatabase containing five sets of data categorised in three periods of time (2015, 2030, 2050) - reference scenario, nature-based scenarios, population growth scenarios, climate change scenarios and combined scenarios. End-users will be consulted as to the data/layers to be included in the database (with WP3 and WP5).
- Develop the SDST user interface: Geodatabase sets and layers will be integrated, using e.g. CommunityViz[19] for ArcGIS10 or similar, such that scenario simulations can be defined, visualised and assessed in real-time. Visualisation tools (2D/3D) will be included in the *NSB Impact Simulation & Monitor* to enable understanding of alternatives, opportunities and feedbacks.
- Co-test and co-validate the SDST: A preparatory period is foreseen, including SDST training sessions with 'expert users' in front-runner cities. In turn a prototype SDST will be developed, containing a representative set of scenarios and corresponding indicators for testing, validation, adaptation and learning with stakeholders (with WP3, WP5). The SDST geodatabase will be updated as additional simulation results become available (T3.2).

UNaLab will use the SDST in combination with touch tables in front-runner cities to deliver powerful geovisualisation tools to support understanding of NBS impacts, participatory planning and decision-making. To achieve the continuous improvement of tools tailored in T4.3, during the execution of ULLs they will be refined according to feedback from stakeholders.

T4.4 Data Management Tools (ENG, M3S, VTT)
This task will provide the UNaLab tools for data collection, storage, recombination (mash-up) and management. In particular, the *IoT Data Collector* will be the back-end component that captures data transmitted via by the IoT harmonisation middleware tailored in T4.5 and publish such raw data in the UNaLab database. These data will be usable with the *Visual Data Mashup Creato*r. T4.4 will also provide the *UNaLab Database*, a federated environment where all data (e.g. sensor data, performance results, data extracted from front-runner cities' IoT platforms, mashed-up data ready for visualisation using the *NBS Impact Simulator & Monitor*, and SDST data) are published as Open Data. This asset will take advantage of the FIWARE CKAN Generic Enabler[20]. A UNaLab Open Data node will be also provided within the cloud to allow front-runner and follower cities without an existing Open Data Management System to join the UNaLab data ecosystem. Finally, this task will provide the *Visual Data Mashup Creator*, a web-based tool that will let non-expect users define combined data for visualisation using the *NBS Impact Simulator & Monitor* as a result of the mash-up of existing data stored in the UNaLab database. The *Visual Data*

[19] CommunityViz, http://placeways.com/communityviz/, is an IT tool focused on (peri-) urban planning, structured to analyse indicators and scenarios against multiple objectives/criteria.
[20] FIWARE CKAN Generic Enabler, http://catalogue.fiware.org/enablers/ckan

Mashup Creator will also enable users to easily and graphically create mobile nature-based apps based on data published within the workspace. To achieve the continuous improvement of tools tailored in T4.4, during the execution of ULLs they will be refined according to feedback from stakeholders.

T4.5 IoT Harmonisation Middleware (M3S, ENG)

As every front-runner city will have at least one existing IoT platform with data from sensors, the UNaLab *IoT Harmonisation Middleware* will facilitate integration of existing IoT platforms in cities and link standard APIs to the Data Management platform. A harmonisation module will be defined for each front-runner city, due to the heterogeneous nature of IoT platforms currently used by cities. The implementation of the three harmonisation modules in front-runner cities will occur in WP5. *IoT Harmonisation Middleware* will take advantage of the following FIWARE Generic Enabler implementations: a) Backend Device Management – IDAS Generic Enabler[21]; b) IoT Broker Generic Enabler[22]. These will be derived from assets on which consortium partners (in particular M3S, ENG and VTT) have worked previously that will be consolidated/extended in terms of features and functionalities in order to reflect and meet UNaLab needs. In particular, the following aspects and directions will be considered:

- Definition of a set of common APIs and a methodology for normalising, integrating and exposing heterogeneous IoT platforms, provided by front-runner cities, within the common UNaLab knowledge base. APIs will be exploited to integrate existing IoT platforms to provide a common "channel" through which data from the cities will reach the UNaLab database.
- Definition of common harmonisation middleware to manage the many inputs, provided through the Common APIs, and provide horizontal features such as standard channels to deliver data to the other UNaLab actors. The middleware will exploit commonly available FIWARE Generic enabler implementations and will be founded over well-established standards for platform development.
- Definition of common features and software modules for the exploitation of the large quantity of data provided by the UNaLab platform by means of commonly-available end-user tools, such as widely-used applications for spreadsheet authoring, to leverage the potential of end-user computing and to provide well-known tools to the UNaLab end-users for analysing, viewing and publishing data.

T4.6 UNaLab ICT Framework Integration & FIWARE Environment Maintenance (ENG, VTT, M3S, INN,IMP)

UNaLab framework components will be fully integrated and the guidelines to set up the cloud environment of UNaLab will be defined. The integration phase will be iterative and strictly related with the other tasks of WP4. In particular, any technical issues with UNaLab components preventing successful integration will be promptly detected, analysed, repaired, and reported; all information will be shared among sites. This task will coordinate the activities of T4.2, T4.3, T4.4 and T4.5 with respect to the integration (including the definition of interoperability APIs among UNaLab framework tools and their implementation) and setup of the UNaLab cloud environment. The UNaLab framework will be installed in the *UNaLab Cloud-Based FIWARE Environment*. "Green Cloud infrastructure"[23] will be provided by ENG and physically located in Pont-Saint-Martin (Italy), as the Pont Saint Martin data centre uses a latest-generation geothermic system that exploits 13°C water in the underlying waterbed for cooling.

Milestones & Deliverables

M4.1 UNaLab framework architecture defined (ENG) (M6)

M4.2 UNaLab framework refined and front-runner city assets integrated (ENG) (M12)

M4.3 Prototype SDST geovisualisation software (ENG) for front-runner cities (M14)

M4.4 Prototype UNaLab ICT framework tools (VTT) & IoT harmonisation middleware prototype deployed (M3S) (M18)

M4.5 NBS data management tools developed for front-runner cities, M20)

D4.1 UNaLab ICT framework architecture (ENG): description of UNaLab framework architecture and guidelines for asset integration (R, CO, M12)

D4.2 Prototype SDST geovisualisation touch tables (ENG) for training of city 'expert users' in front-runner cities (DEM, PU, M14)

D4.3 Delivery of UNaLab Data Management tools (ENG) (DEM, CO, M24)

D4.4 Delivery of Open Innovation/crowdsourcing and performance measurement tools (VTT) (DEM, CO, M24)

D4.5 Installation of touch tables with geovisualisation tools and SDST simulation of all parameters for public use in front-runner cities (ENG) (DEM, PU, M36)

D4.6 Interim (M40) Handbook of UNaLab Framework setup, integration (ENG); Final Handbook (M60) including previous plus optimisation guidelines (R, PU, M40, M60)

[21] Backend Device Management – IDAS FIWARE Generic Enabler, http://catalogue.fiware.org/enablers/backend-device-management-idas

[22] IoT Broker FIWARE Generic Enabler, http://catalogue.fiware.org/enablers/iot-broker

[23] Green Data Centre in Pont-Saint-Martin (Italy), http://www.eng.it/gruppo/scheda-descrittiva-societa.dot?com.dotmarketing.htmlpage.language=1&id=5c9ad385-6aed-43a1-8d3b-45a88a46c0ba

3.1.5 Work Package 5 – Water and Climate Resilient Urban Living Labs

WP number	5							Start date or starting event					M1	
WP title	Climate & Water Resilient Urban Living Labs							Duration/ending month					60/M60	
WP leader	VTT (co-lead: FHG)													
Part. number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Part. short name	VTT	FHG	EIN	GEN	TRE	STA	CAS	CAN	PRA	BAS	ENoLL	ERRIN	LAN	ENG	M3S
PM per part.	20	12	25	25	25	0	0	0	0	0	4	0	9	0	0
Part. number	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Part. short name	RAM	INN	IMP	DAPP	IRE	ESP	PRA	TUE	UAV	STU	LTU	ARU	HON	UBA	
PM per part.	22	13	13	3	25	0	0	2	11	20	3	0	0	0	

Objectives

The overall objective of WP5 is to organise and manage the implementation of NBS in accordance with the local co-creation process, including providing support for innovative governance models and business and financing models. The technical demonstrations will be planned and implemented in close collaboration between cities and local partners with additional support from the UNaLab consortium. WP5 is strongly aligned with the other work packages in this innovation action:

- WP2 provides local stakeholders with training and advice on the application of ULL methodology to be used in WP5;
- WP3 provides a standardised monitoring and impact assessment scheme for consistent measurement and evaluation of the performance and impacts of NBS systems implemented in front-runner cities as ULL demonstrations in WP5;
- WP4 provides a robust ICT reference architecture and open data management solutions which support the co-creation process (WP2) as well as NBS monitoring and impact assessment (WP3) within WP5;
- WP6 is aligned with WP5 via the derivation and testing of business and financing models for NBS in order to maximise exploitation, up-scaling and replication; and,
- WP7 facilitates regular, open communication between all UNaLab partners, particularly focusing on exploitation of networks to gather and disseminate information among project partners.

Description of work

Task 5.1 NBS Technical Handbook (STU, UAV, TUE, VTT)

An *NBS Technical Handbook* will be generated to provide accurate, detailed information about the full range of potentially applicable NBS to support urban climate and water resilience, their anticipated or demonstrated performance, and their limitations in order to facilitate informed decision-making during the NBS co-creation process. An interim handbook (M09) and associated workshop for urban ecologists in front-runner cities will provide input for NBS co-creation in front-runner cities. An updated final handbook (M60) including detailed information on NBS performance and impact in UNaLab front-runner cities as well as additional details and performance assessment will be created for use by follower cities and other cities beyond the UNaLab project. The *NBS Technical Handbook* will thus be a living document and will be iteratively improved with the feedback of the follower cities and complemented with additional NBS that might be required in the follower cites due to their specific contexts. Further, the NBS handbook will become part of the Replication Framework (developed in WP6) where the solutions within the Handbook will be complemented by business models with municipal governance guidelines, replicable business models as well as alternative financing strategies.

STU and UAV will work closely with assistance from TUE to gather existing information on NBS design, operation, performance, cost-effectiveness, and impact from peer-reviewed scientific literature, published reports, and unpublished data from UNaLab partner organisations and affiliates. Information specific to NBS implemented in front-runner cities will be added to the handbook in an iterative process. In addition to technical data and performance and impact assessments, the final NBS handbook will critically review the applicability of individual NBS or NBS systems to address specific urban climate and water issues. In summary, the NBS handbook will: compile information on existing NBS including water cycle relevant green infrastructures; describe NBS mode of action, applicability and efficiency; and, estimate NBS model parameters.

T5.2 Demonstration of NBS in the City of Eindhoven (EIN, INN, IMP, ENOLL, LTU)

T5.2.1 Management of NBS Demonstration and Investment (EIN)

The entity responsible for overseeing NBS implementation in Eindhoven will be the Spatial Planning Department (overall management, procurement), supported by the Public Works Department (technical coordination) and Strategy Department (stakeholder management). NBS implementation will be carried out by EIN and third parties following an innovative co-creative

procurement process involving citizens and stakeholders in the setting of ambitions and award criteria. EIN will work with the established G-1000 initiative and commit to the outcomes of local EASW conducted in the city as part of WP2. A local ULL Manager will coordinate interactions among the ULL for NBS demonstration, stakeholders, and EIN.

T5.2.2 Planned NBS Demonstration Actions (EIN, INN, IMP)

EIN will demonstrate NBS based on a co-created integrated roadmap for Smart Urban Spaces, focusing on developing green and blue spaces in the city to provide a safe and pleasant living environment for the citizens of the region. Identified areas for investment at present, with NBS form and design to be determined via co-creation workshops include:

- *Action 1 – Increasing green areas within the city.* Areas: Victoria Park; Clausplein; Fietsenstalling Centre; 18 Septemberplein; H. Broeckstraat; Dommelstraat; Waagstraat, Rode Loper, Bilderdijklaan, Stationsweg. Planned investment € 1,05 million.
- *Action 2 – Green roofs and green facades.* Areas: Witte Dame; Gevel V&D; Seepaerdstate. Innovative bio-based sensors integrated in the structure. Planned investment € 500 000.
- *Action 3 - daylighting of watercourses.* Areas: Victoria Park; Stationsweg. The action will take place in two of the areas also covered under Action 1. Actions will be carried out as part of an integrated action linking green and blue measures, together with a process of citizen participation. Planned investment € 450 000. .
- *Action 4 – Preparation of water stockage areas.* Areas: Victoria Park; Stationsweg. The action will take place in two of the areas also covered under Action 1. Actions will be carried out as part of an integrated action linking green and blue measures, together with a process of citizen participation. Planned investment € 500 000.
- *Action 5 – Heat stress mitigation.* Areas: Victoria Park; Clausplein; Witte Dame; 18 Septemberplein; H. Boexstraat; Dommelstraat; Waagstraat, Bilderdijklaan. The action will take place in some areas also covered under Actions 1 & 2. Actions will be carried out as part of an integrated action linking green and blue measures, together with a process of citizen participation. Planned investment € 550 000.
- *Action 6 – Biodiversity enhancement.* Areas: Mathildelaan, Clausplein, Dommelstraat, Waagstraat, H.Boexstraat, Stationsweg, Victoriapark, Rode loper, Bilderdijklaan. The action will take place in areas also covered under Action 1. Actions will be carried out as part of an integrated action linking green and blue measures, together with a process of citizen participation. Planned investment € 550 000.
- *Action 7 - Development of a comprehensive urban ecological plan, focusing on integrated water management.* EIN will develop an integrated plan, in cooperation with all local stakeholders to ensure that 'green and blue' spaces provide a safe and pleasant living environment for the citizens of the region. A high quality of life is achieved by integrated physical planning to realise a resilient region through invigorating the interdependences of blue (water), green (flora), grey (pavement) and red (buildings). Plan will address, in particular, the issue of underground infrastructure as a limiting factor for greening the city centre. Planned investment € 100 000.
- *Action 8 - Local Data Platform, sensors, app development for monitoring, touch tables.* Geo-triggered survey to collect ideas about the usage and design of public space. Using website to exchange knowledge and experiences between stakeholders/citizens "040goedbezig". i-tree sensors to measure the contributions of different types of trees towards air pollution, water use, adsorption of CO_2, etc. Planned investment € 150 000.

Subtask 5.2.3 Co-Creation & Options for Replication in Eindhoven (EIN, INN, IMP, ENOLL, LTU)

EIN will engage local stakeholders (citizens, entrepreneurs, business owners, industry representatives, and others) in the following manner:

- By engaging with local stakeholders in the EASW process (WP2), the city will establish the chosen scenario for the future of the city centre with respect to NBS and sustainability.
- The EASW process will be initiated in close cooperation with the local "new Democracy" initiative G-1000 Eindhoven (http://g1000eindhoven.nl/), a bottom-up initiative that aims at bridging the divide between citizens and local government.
- Stakeholders will engage in setting the scene for the inner city projects, will continue to engage in the assessment of the success of the selected measures, and will cooperate with the city administration to define pathways towards further roll-out of successful measures to other parts of the city.
- Stakeholders will co-create local "liveability indicators" to be used in the assessment of the success of the different measures. The key question will be to determine when, according to the local users, a measure is deemed successful.

Activities will include:

- The adaptation of generic NBS scenarios to the local context
- The organisation of three local Scenario Workshops in Eindhoven with some 30-40 citizens/stakeholders each.
- The organisation of local meetings with stakeholders, co-organised with the G-1000 platform, to prepare the innovative procurement process for part of the investments and co-create ambitions and selection criteria for the investment.
- The use of innovative, mobile communication based technologies to monitor (with project partner INN) the response to the implemented actions will allow citizens as well as other users of the demonstration areas, to measure the impact on the liveability of the demo areas and is a means of offering citizens a say in the assessment of the success of the measures.

T5.3: Demonstration of NBS in the City of Genova (GEN, IRE, LAN, EIN, ENOLL, DAPP, LTU)

T5.3.1 Management of NBS Demonstration and Investment (GEN, IRE, LAN)

The subject responsible for the implementation of the NBS in the pilot area of Lagaccio is GEN, specifically the department of Public Land and Public Property (Settore Progetti Speciali) which will coordinate other municipal offices such as public works, maintenance, environment, and tenders and contracts. The demonstration will be managed and implemented as follows:

- technical coordination between the UNaLab project and GEN's strategic objectives (urban plans, programmes, etc.): will be carried out by GEN;
- supervision of design & detailed planning activities: will be carried out by GEN;
- design & detailed planning activities: will be carried out by IRE and LAN in the framework of the project;
- implementation of NBS: will be carried out by GEN through a combination of:
  - public procurement (tenders) for very specialised analyses and works
  - engagement of local stakeholders (associations, citizens, SMEs, etc.) in the co-implementation;
- works direction: will be carried out by GEN;
- monitoring will be carried out by IRE, GEN and LAN;
- participatory process: coordinated by GEN, with the support of IRE and LAN.

The UNaLab project will contribute to financing the Requalification Plan's first lot of activities (as NBS demonstration area) concerning water management solutions and green areas, acting as seed money able to generate further potential public and private investments (thanks to stakeholders involvement and new governance of financing models). The remaining amount will come from: municipal funding (infrastructures, public works, mobility networks, etc.); public/private partnerships for existing building renovation; and project financing for the new public lots.

T5.3.2 Planned NBS Demonstration Actions (GEN, IRE, LAN)

GEN has recently approved a Requalification Plan for Gavoglio Barracks located at the core of Lagaccio district. In the Plan's first implementation lot, the city will test a number of NBS by deploying urban water drainage systems and increasing green spaces, aimed at improving water management and the resilience of the whole area to possible flooding (serious problem in Genova). The Requalification Plan for Lagaccio's Gavoglio Barracks foresees a global investment of € 70 million in the area, comprised of environmental analyses and demolitions (€ 1,5 million), buildings restoration (€ 31 million), new sport facilities (€ 2,5 million), establishment of green areas and open spaces (€ 1 million), ensuring accessibility and mobility (€ 1,2 million), improving urban water cycle connectivity and hydrologic safety (€ 2.4 million), construction of new parking lots (€ 2,4 million), new public transport systems (€ 11 million) and additional costs associated with design, testing, safety systems, etc. (€ 11 million). Planned NBS and estimated costs for co-created systems in Lagaccio include:

- *Action 1 – Unseal soil through targeted demolitions* (around 46,000 m^3 of existing buildings on 4,500 m^2), thus increasing soil drainage capacity and enabling ground water recharge (draining surfaces on site will be increased of nearly 30%). Planned investment € 800 000.
- *Action 2 – Increasing green areas within the city.* Planned investment € 1 million.
- *Action 3 - Reshaping of Lagaccio's Cinque Santi river*, which runs under the area and could potentially be subject to flooding. Planned investment € 450 000. .
- *Action 4 – Improve water management* and quality on site through innovative collection, disposal, depuration and reuse of rainwater from roofs and sealed surfaces. Planned investment € unknown.
- *Action 5 - draining features* - in the framework of a new 3600 m^2 recreational public space, that will also represent a new centrality for the neighbourhood and create an aggregation area (draining hardscape surfaces through paved landscape terraces, green patches, trees, playgrounds). Planned investment € 35 000.
- *Action 6 - rain gardens* allowing runoff from impervious urban areas to be absorbed. Planned investment € 600 000.
- *Action 7 - community gardens* offering productive 1200 m^2 of green open space involving inhabitants by including urban farming and rest areas, in order to increase people awareness of flood risk and limit the potential damage of flooding. Planned investment € 100 000.
- *Action 8 – Enhance biodiversity*. The new green spaces will be reconnected to the existing nearby green areas (such as Peralto Naturalistic Park and the forts) and this conjunction will create a green corridor in which it will be possible to develop and increase biodiversity and decrease urban heat stress, ensuring a well-functioning eco-system.

Subtask 5.3.3 Co-Creation & Options for Replication in Genova (GEN, IRE, LAN, EIN, ENOLL, LTU)

Participatory processes were successfully implemented by GEN in 2015, with the ongoing Gavoglio Barracks' Requalification plan taking into account citizens' wishes and ideas as a result of a number of public events and local meetings. For the UNaLab project, GEN plans to build on this experience and keep promoting co-creation and participation by the local citizens/stakeholders in the detailed co-creation of NBS. The rich network of local associations present in the demo area (>30) will play an important role in NBS demonstration activities. The participatory process will follow a step by step approach as detailed in WP2. GEN will coordinate the process and technical partners (IRE and LAN) will guarantee technical feasibility and

integrate stakeholders' inputs in the design phase. Stakeholders will be given the chance to actively participate to the implementation wherever possible (e.g. community gardening, information and education activities, etc.). Activities will include:

- analysis of the area and context: further in-depth study on the demo area will be carried out to verify the feasibility of the requalification interventions that have been previously identified;
- systematisation of the knowledge of the area: all the available data will be organised using SWOT format to identify internal strengths, weaknesses, opportunities and threats;
- identification of a number of potential NBS as a result of the above analyses
- organisation of thematic workshops with stakeholders: inform stakeholders about the selected NBS, listening to their proposals and engage with them in a positive discussion until a shared scenario is agreed upon. The agreed scenario should be sustainable from the environmental, economic and social point of views.
- Definition of KPIs
- Demo co-design

GEN will use the "Genova Smart City Association" created in 2010 to support the smart city process (currently involves over 90 members from public bodies, research, industry, SMEs and civil society) by helping to include public and private stakeholders in the process of developing, replicating and scaling up NBS in the city of Genova. IRE will ensure replication throughout the Liguria Region, which is made up of 235 Municipalities spread over 4 Provinces.

The local organisation for co-creation process and uptake will be structured as follows:

- a core group: including GEN as coordinator and IRE and LAN as technical partners;
- a wider group: including the 30 local associations and the members of the Genova Smart City Association.
- The local group is able to effectively manage NBS replication / up-scaling activities consisting of:
  - public entities, which represent all the citizens and the city and define the existing planning instruments as well as possible financing;
  - private entities (technical partners), who have appropriate prior knowledge on similar projects, as for scale, as for scope and can co-finance projects;
  - associations, representing not only the area but the entire town vision already shared with the Municipality.

After the experience of the UNaLab project, the local group will develop guidelines that could be followed by the local administrators and applied in GEN's urban plan, which is already sensitive to environmental safety issues. The application of NBS should cover the whole Gavoglio Barracks area. Activities will include: organise meetings with the GSMA and the associations to co-define future replication areas; prepare guidelines for future replication of NBS; and preliminary definition of replication areas inside the city.

Task 5.4: Demonstration of NBS in Tampere (TRE, VTT, RAM, ENOLL, EIN, LTU)

T5.4.1 Management of NBS Demonstration and Investment (TRE)

TRE will oversee NBS implementation. NBS implementation will be carried out by TRE and third parties. VTT will advise and provide expertise on NBS, ICT-based solutions and urban infrastructure whilst TRE will manage NBS implementation in partnership with RAM. TRE will commit to the outcomes of local EASW conducted in the city as part of WP2. A local ULL Manager will coordinate interactions among the ULL for NBS demonstration, stakeholders, and TRE.

T5.4.2 Planned NBS Demonstration Actions (TRE, VTT, RAM)

Quantifying impacts of the arctic climate on NBS performance is of utmost importance to TRE and will provide essential knowledge for NBS deployment in similar cities in boreal/arctic climate zones. TRE will examine the efficacy and seasonal performance of a suite of NBS, including but not limited to: stormwater ponds, raingardens and public green spaces designed to enhance floral and faunal biodiversity whilst managing urban stormwater runoff; green roofs and walls of buildings; biofilters; and pervious pavements or similar solutions to further connect the urban water cycle. In addition, TRE will implement and test a standardised monitoring and assessment protocol and SDST (WP3) as well as an online open data platform and integrated IoT smart sensor network (WP4) for monitoring the performance and evaluating impacts of implemented NBS. For each co-created NBS deployed at either of the ULL demonstration areas (Vuores or Hiedanranta), particular focus will be on seasonal effects on NBS system performance, e.g. freeze/thaw cycles and differences in rainfall intensity.

VUORES: NBS demonstration in the Vuores ULL will focus on stormwater management in the 6-ha Tervaslammen park, which will form part of an ecological corridor between the residential blocks, ending at Särkijärvi beach. The corridor will support the conservation of biodiversity within the urban zone and habitat connectivity. Implementation of NBS to manage stormwater quantity and quality and protect adjacent waterbodies during park construction is anticipated. The integrated suite of co-created NBS to be implemented and monitored in Vuores will include, but is not limited to:

- *Action 1 – Installation of co-created NBS for stormwater management* in Tervaslammen park which are complementary to existing stormwater ponds, swales and retention areas for control of water flows and water collection in both existing and developing areas. Planned investment €255 000.
- *Action 2 – Implementation of green roofs and/or walls* to manage water flows (storage) and quality, with particular focus on their performance during cold seasons. Planned investment €110 000 based on estimated cost of € 100/m^2.

- *Action 3 – Performance management:* development and implementation of maintenance measures, and review and optimisation of integrated blue-green-grey stormwater management infrastructure performance. Planned investment €175 000.
- *Action 4 - Biofilters and water permeable surfaces* (pavements, infiltration swales, rain gardens, etc.) to improve both the connectivity of the urban hydrologic regime as well as water quality. Planned investment up to €200 000.
- *Action 5 - Accessible urban spaces* for combined recreation, stormwater management, food production and/or biodiversity preservation to enhance urban amenity values and social connectivity. Planned investment up to €150 000.

T5.4.3 Co-Creation & Options for Replication in Tampere (TRE, VTT, ENOLL, EIN, LTU)

The co-creation process in Tampere will leverage TRE's existing relationships with businesses and community groups and extend the current model of citizen stakeholder engagement to simultaneously engage diverse stakeholder groups including the public sector, business and industry representatives, and a broad spectrum of citizen stakeholders in co-creation activities. TRE will seek to embed educational opportunities within co-creation workshops to facilitate formal involvement of student and community groups. Co-created NBS will be described in detail within a project / business canvas and discussions initiated between TRE and private sector representatives regarding co-investment in NBS and potential for public / private NBS operation. TRE and VTT will work with stakeholders to translate urban climate and water management needs identified and prioritised during co-creation workshops into KPIs and KIIs based on the desired longer-term impacts of NBS implementation. Using the *NBS Technical Handbook* developed in Task 5.1, along with the visualisation and decision-making tools developed in WP3 and WP4 (SDST and touch tables, ICT data management and co-creation platforms), and VTT and TRE will jointly coordinate development of appropriate, measurable and achievable goals and associated KPIs and KIIs for co-created NBS.

HIEDANRANTA: Selected existing NBS and NBS systems co-created during UNaLab in the Vuores ULL NBS demonstration area will be replicated at the Hiedanranta ULL NBS demonstration area during UNaLab. Plans for Hiedanranta urban development will leverage stakeholder co-creation and NBS to transform the former industrial area (brownfield) into a smart, sustainable, eco-efficient urban community. The Hiedanranta ULL will centre on the 1-ha Virolaisten park adjacent to Virolaisten lake. The water management objective will be to protect the aquatic ecology of the lake by managing the quality of discharged surface and shallow subsurface water. Particular concerns in this area relate to subsurface leaching of nutrients and/or trace metals and organic compounds in stormwater discharge from Hiedanranta's former land uses.

- *Action 6 –Co-created bio-filtration NBS* for stormwater management in Virolaisten park. Planned investment €300 000.
- *Action 7 – Pilot-scale algae-based system* for sustainable surface water purification and nutrient recovery; establishment in partnership with local University. Planned investment €100 000.
- *Action 8 – Innovation vouchers* - Up-scaling activities will include use of innovation vouchers to enable existing housing companies in Tampere to work with stakeholders to co-design and co-implement small-scale stormwater management landscaping systems and complementary infrastructure (e.g. green roofs or walls, rain gardens, rainwater collection systems for non-potable irrigation, etc.) and/or urban garden areas. Construction companies, landscape architecture firms, and other NBS-related businesses and SMEs will be encouraged to actively engage in co-creation by linking tenders for services to co-creation workshops as well as NBS implementation activities. Planned initial investment €40 000.

T5.5 Municipal Governance of NBS (FHG, STU)

This task will deliver municipal governance recommendations for municipalities, which are necessary to finance, build, manage and operate NBS. Guided and supported by FHG, UNaLab front-runner cities will develop governance approaches which support decision-making, investments, management and maintenance of NBS. UNaLab front-runner cities will focus on developing processes, organisational structures, programmes and communication-based instruments to effectively integrate NBS and "smart processes" in the everyday business within key departments of the city administration. They will further develop, test and improve approaches to maximise the engagement of citizens and the private sector into an innovation-based delivery of public services wherever possible. In WP6, the experience of front-runner cities will be analysed and a universal *Municipal Governance Guideline* will be developed which will be applicable in the follower cities and cities beyond the project.

T5.5.1 Cross-Departmental Organisation & Communication (FHG, STU)

Sound top-level organisation, strategy-based decision making and the management and monitoring of a complex system – often in an iterative approach – is required to effectively manage the planning, financing, building and operation NBS involving various departments and offices within the city administration. At the same time, to ensure co-creation it is essential to engage civil society, local SME's, research and businesses in the process of urban innovation. FHG and STU will identify organisational challenges to planning and implementing NBS in the front-runner cities and outline the processes necessary to modernise administrative structures and planning processes in order to better integrate NBS into urban planning. Two high-level workshops will be conducted in each front-runner city with local decision-makers and representatives of the departments needing to interact closely to deliver successful NBS projects. The workshops will identify organisational frameworks to better deal with NBS in the corresponding municipal processes. The expected impact of this subtask is more efficient organisation, communication and workflow across and between the relevant departments and offices that will collaborate within UNaLab Project design and implementation (e.g. Environment, Planning, Citizen Services, ITC, Water, and Infrastructure).

T5.5.2 ICT Governance & evidence-based planning (FHG, STU)

FHG and STU will assess the current ITC-governance structure of front-runner cities and identify barriers and supportive structures for optimised ITC-based monitoring and management of NBS. The UNaLab ICT tools and platforms (WP4) will be integrated with existing ICT governance and measures derived to improve existing ICT governance in a sustainable manner. This includes urban data platforms and architecture, big data analytics (real-time), management of data and service providers, development of new smart services, and provision of e-services/e-government for NBS. This will result in: better integration of existing data across departments and service providers; better management of data; better visualisation of data, contributing to development of value-added services for NBS; greater transparency for collaborating with municipal service providers and better governance of partner companies and institutions; and a higher degree of involvement and consensus in citizen-centred engagement processes via visualisation and simulations.

T5.5.3. Financing and procurement (FHG, STU)

FHG and STU will support municipalities to identify value cases for NBS in addition to further corresponding investment (national and international strategies) and financing instruments such as green bonds, sustainability funds, etc. to enable implementation and monitoring of appropriate NBS and ICT technologies. Results will inform the NBS Value Model (WP6). National and international policies will provide the basis to support NBS financing in each respective country and will lead to innovative instruments for public procurement and financing vehicles. The current procurement process for NBS (or comparable urban water infrastructure) in each front-runner city will be modelled and compared with other front-runner cities based on standard process management methodologies. This will generate a practical improvement of bringing NBS towards implementation and enable NBS categorisation based on suitability for various financing vehicles.

T*5.5.4 Policies (Regulations & Incentives) (FHG, STU, EIN, GEN, TRE)*

FHG and STU will identify regulations and incentives in the areas of water management, housing /buildings and ICT that support uptake of NBS in cities. Policy innovation workshops will be organised with UNaLab front-runner cities to identify potential regulations and incentives that support a high rate of adoption and successful implementation of NBS in future urban planning and development. Results will be documented in the form of a policy analysis applicable to each front-runner city. Local representatives from the city council and the city government will be invited to join workshops. This task will contribute to long-term mainstreaming of NBS and co-creation within urban planning regulations and infrastructure policies.

Milestones & Deliverables

M5.1. Interim *NBS Technical Handbook* completed & NBS technical implementation workshop for urban ecologists from front-runner and follower cities conducted (STU, R, CO,M9)

M5.2 Municipal governance recommendations for front-runner cities completed (FHG, M12)

M5.3 ULLs for NBS demonstration initiated in Eindhoven, Genova and Tampere (VTT, M36)

M5.4 Draft *NBS Implementation Handbook* released (VTT, M36)

M5.5 Update of NBS technical specifications including data from UNaLab NBS demonstrations (STU) as input to D5.4 (M54)

D5.1. Interim NBS Handbook (STU) for front-runner cities (R, CO, M12)

D5.2 Municipal governance recommendations for front-runner cities (FHG). Individual municipal governance recommendations for GEN, EIN and TRE (R, CO, M12)

D5.3 Preliminary *NBS Implementation Handbook* (VTT) NBS implementation handbook including NBS technical specifications, performance monitoring and impact assessment guidelines, and maintenance recommendations. (R, CO, M36)

D5.4 ULL NBS demonstration sites: Report on Establishment of ULLs for NBS in EIN, GEN and TRE (VTT, R, PU, M42)

D5.5 *NBS Implementation Handbook* (VTT) NBS implementation handbook including NBS technical specifications, performance monitoring and impact assessment guidelines, and maintenance recommendations, updated and improved based on NBS demonstrations in EIN, GEN, and TRE (D5.5, R, CO, M36 Draft; D5.6, R, PU, M60 Final)

3.1.6 Work Package 6 – Planning for Effective Replication, Upscaling and Exploitation

WP number	6							Start date or starting event							
WP title	Planning for Effective Up-Scaling and Replication							Duration/ending month							
WP leader	FHG (co-leaders: DAPP, TU/e)														
Part. number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Part. short name	VTT	FHG	EIN	GEN	TRE	STA	CAS	CAN	PRA	BAS	ENoLL	ERRIN	LAN	ENG	M3S
PM per part.	5	25	5	5	5	10	10	10	5	10	4	5	1	0	0

Part. number	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Part. short name	RAM	INN	IMP	DAPP	IRE	ESP	PRA	TUE	UAV	STU	LTU	ARU	HON	UBA	
PM per part.	0	0	0	35	3	5	5	30	5	30	0	24	46	10	

Objectives

The main objective of WP 6 is the development of an NBS Replication Framework for the smooth replication of NBS in follower and front-runner cities in the context of an integrated urban ecological approach. Objectives are to:

- Develop Municipal Policy Guideline
- Identify effective business models and feasible business plans for deployment of NBS in front-runner and follower cities
- Identify an NBS Value Model referring to national and international policies to leverage financing
- Promote effective technology transfer and networking between front-runners and follower cities, providing a platform for knowledge-transfer of best practices between cities focusing on exploitable products, services and processes
- For front-runner cities: upscaling analysis, engaging all relevant stakeholders (e.g. engagement of different citizen initiatives that are active in other parts of the city on the implications of NBS for their part of the city)
- For follower cities: replication analysis of NBS selected by the front-runners to complement the *NBS Technical Handbook* (WP5), engaging relevant stakeholders
- Develop recommendations and guidelines for UNaLab partner cities regarding effective exploitation of NBS

Description of work

T6.1 Detailed Planning and Revision of NBS Replication Framework (FHG, TUE, DAPP, STU, VTT)

The centrepiece of WP6 is the development of the *Replication Framework* for UNaLab follower and observer cities, applicable to cities beyond the consortium. The *Replication Framework* will be based on co-creation and will include the following key elements: municipal governance guideline, ULL co-creation tools (WP2), SDST and linked geovisualisation tool (WP3, WP4) and an NBS Technical Handbook (WP5). The viability of these tools and guides will be ensured by linking them with corresponding business and financing models and procurement tools. Along with the *Roadmapping Strategy*, this *Replication Framework* will be applied in UNaLab follower cities (Task 6.5). T6.1 will smoothly integrate the aforementioned tools and guides within a coherent *Replication Framework*, to be developed in an iterative process During the application of the *NBS Replication Framework* as part of the roadmapping process in follower cities, feedback will be collected to improve the *Replication Framework*. The final *Replication Framework* will be delivered in the final phase of UNaLab.

T6.2 NBS Value Chain Analysis & Evaluation of Replication & Upscaling Potential (DAPP, EIN, GEN, TRE)

The value chain of NBS implemented in front-runner cities will be analysed and their potential for replication/upscaling evaluated. During the co-creation process, front-runner cities' proposed solutions will be analysed both from a commercial and industrial perspective and from a geopolitical and strategic point of view. These NBS will be studied from a value chain perspective considering all possible actors involved and the needs expressed by front-runner and follower cities in the first Exploitation Workshop (T6.6). During UNaLab, thorough analysis, evaluation and monitoring of NBS demonstration activities and their results (WP3) will facilitate detailed analysis of NBS suitability for replication from front-runner cities to follower cities, optimising the lessons learned within the UNaLab project. T6.2 links with business model development in T6.3.

T6.3 Development of Financing Strategies for NBS (FHG, DAPP, EIN, GEN, TRE)

T6.3 will develop holistic strategies for financing NBS that will include both business models for implemented NBS as well as alternative financing strategies. These financing strategies will complement the *NBS Technical Handbook* (WP5) and be delivered in a separate handbook supporting NBS implementation along with governance models, the *Replication Framework*, and *Roadmapping Strategy*. Results of T6.3.1 (replicable business models) will provide the basis for development of a holistic NBS Value Model (T6.3.2).

T6.3.1 Replicable Business Models for NBS Implemented in Front-Runner Cities (DAPP, EIN, GEN, TRE)

T6.3.1 will formulate replicable business models for NBS exhibiting suitable technical performance and high replication potential. The NBS demonstrated in WP5 will be assessed with respect to their ability to generate added value for users in contexts other than those in which they are demonstrated. Accordingly, the value innovation potential of the offered solutions will be generalised and, if necessary, strategies for further value increase for users will be defined. Cost aspects will also be analysed, along with competition represented by more traditional solutions in the same market segments. This assessment will allow formulation of propositions with greater added value and comparable costs.

Classical elements of a business model will be assessed, e.g. necessary key activities, necessary resources and partnerships, foreseen cost structure and revenue streams, need for related financial investment, the relevant stakeholders to be mobilised or addressed to actuate the business model, etc. Key elements will be collected and validated by means of ad hoc surveys and brainstorming sessions via planned events (exploitation meetings in T6.6), involving front-runner and follower cities as well as relevant experts and stakeholders. Draft replicable business models for NBS will be provided early in the project (M06)

for discussion and validation with front-runner and follower cities, in order to evaluate how general NBS and related business models can be transferred to other urban areas.

T6.3.2 Development of a NBS Value Model referring to national and international policies to leverage financing (FHG)
FHG will develop a holistic value model for NBS to provide cities with an instrument to leverage capital for NBS co-development and co-implementation where business models are not applicable due to an indefinable value chain and unclear assignment of benefits to specific beneficiaries. Holistic evaluation will be used to identify the beneficiaries of NBS and assign values to benefits in order to inform the design of mechanisms to leverage investments and encourage beneficiaries to pay for the benefits received via NBS implementation. FHG will work in close collaboration with WP3 to determine the value of NBS implemented in front-runner cities, analysing values assigned to changes in ecosystem services as a result of NBS implementation, focusing on benefits, costs and beneficiaries. Financial Instruments for NBS (implementation and operation) will be identified in the context of national and international policies. FHG will refer to national and international policies that support NBS financing in the respective country and make reference to larger UN-based programs (e.g. TEEB, climate finance etc.) as well as to national and supra-national sustainability policies that support biodiversity and ecosystem services (e.g. UNEP, biodiversity convention, national funding programs) and policy-based market mechanisms.

T6.4 Municipal governance guideline (FHG, STU, EIN, GEN, TRE)
T6.4 will identify municipal governance structures which ensure widespread adoption and implementation of NBS in urban planning and development to generate practical guidelines for follower cities and cities beyond UNaLab. The adapted Fraunhofer Integrated Assessment Tool will be applied to assess the success of municipal governance recommendations provided for front-runner cities in WP5. Municipal governance models and actions that have proven successful and relevant for NBS implementation will be translated into a municipal policy guideline for application during roadmapping (T6.5) to ensure the creation of viable roadmaps for NBS implementation in the follower cities.

T6.5 Roadmapping (TUE, FHG, VTT, DAPP, STU, EIN, ESP, GEN, TRE, STA, BAS, IPR, PRA, IRE, CAS, CAN)
T6.5 will facilitate development of specific desired future scenarios for follower cities and apply the *Replication Framework* to ensure the adaptation of NBS demonstrated in front-runner cities to the local context of follower cities and their successful replication. The result of the roadmapping process will be integrated roadmaps for each follower city and a portfolio of desired implementation projects for NBS for the short- and long-term.

T6.5.1 Roadmapping Training (TUE, STA, BAS, ESP, IPR, PRA, CAS, CAN)
Representatives of follower cities will learn about the goal and process of co-creating visions and roadmaps in a 1-day training session (planned in conjunction with project initiation meeting). The R4E roadmaps and process will be used as examples. Best practices for collaboration with local stakeholders will be presented and city representatives will choose stakeholder engagement model which fits their respective culture and context. The training will provide city representatives with a deep understanding of the roadmapping approach and their role in organising co-creative processes.

T6.5.2 Ambition Setting (TUE, STA, BAS, ESP, IPR, PRA, CAS, CAN, HON, ARU, UBA)
Individual 3-day ambition workshops will be held in each follower city wherein several sessions will be conducted with policy makers, and internal and external stakeholders to obtain a thorough understanding of the ambitions and specific context of each city. Local stakeholders will be invited to ambition setting workshops using the follower cities' respective networks. The result of the ambition workshop will be a set of strategic ambitions, reported in a similar format for each follower city to facilitate learning between the cities. A 1-day Joint Ambition Workshop with all UNaLab EU cities will be used to present the follower cities' strategic ambitions, providing an opportunity for cities to learn from one another and identify common and specific ambitions. The workshop will be hosted by one of the front-runner cities and planned in conjunction with the M12 general assembly meeting. During this workshop the front-runner cities will present their respective ULL concept in order for follower cities to select the ULL most relevant to their specific ambitions and identify suitable Buddies (T6.6.1).

T6.5.3 Vision Development (TUE, STA, BAS, ESP, IPR, PRA, CAS, CAN, HON, ARU, UBA)
T6.5.3 will develop desired future scenarios for UNaLab follower cities. Future Telling interviews will be held with thought leaders on climate and water resilience, the results of which will be presented at the Joint Ambition Workshop (M12, T6.2). Follower cities will use this information to select the most relevant Drivers for Change for their ambitions. For inspiration regarding potential future solutions, follower cities will visit the front-runner city ULL previously selected at the Joint Ambition Workshop. Each front-runner ULL will show their vision for the future during a joint visit of the follower cities. Inspiration from front-runner ULLs, results of the Future Telling interviews, and defined ambitions will be used to create future visions for the follower cities. Individual 3-day scenario workshops will be held in each EU follower city wherein several sessions will be conducted with policy makers, and internal and external stakeholders to define and visualise the desired future for the city. The result of the scenario workshop is a poster with the desired future scenario (visual and brief explanatory text). The results will be presented in a 1-day Joint Vision Workshop with all UNaLab European cities (hosted by one of the front-runner cities and planned in conjunction with M18 steering committee meeting), where cities will again learn from one another's visions and together define common needs as input for roadmapping. A 1-day workshop with non-EU cities will be used to reflect upon the visions of the UNaLab cities and identify potential additional vision elements that influence NBS requirements (planned in

conjunction with the M24 General Assembly meeting).

T6.5.4 Follower System Analysis (FHG, STU, VTT, STA, BAS, IPR, PRA, CAS, CAN,ESP,PRA, HON, ARU, UBA)
A system analysis will be carried out using the Fraunhofer System Analysis Tool to identify gaps between the desired future vision and the current situation, thus highlighting deficiencies which need to be overcome to achieve the desired vision. The Tool will address local conditions, e.g. regulations, policies, planning, stakeholders, and existing infrastructure and resilience.

Step 1: Adaptation of Fraunhofer System Analysis Tool to the needs of UNaLab: Using a combined quantitative and qualitative approach, the Fraunhofer System Analysis Tool allows for the evaluation of quantifiable social, economic and environmental pressures on a city as well as how a city addresses its sustainability challenges in relevant urban sectors as urban leadership, regulations and infrastructure. The Tool helps identify specific local success factors and barriers (social, cultural, climatic, etc.) that support or hinder sustainable urban development. This tool will be adapted to the needs of the UNaLab project to include a set of technical resilience and water infrastructure indicators and a checklist on the state of the key action fields (regulations, policy, planning, environment, resilience, and infrastructure) essential for NBS implementation.

Step 2: Analysing Follower Cities' Demands for Action: FHG and STU will conduct a desktop study to collect quantitative data and implement a 5-day on-site assessment in each follower city including site visits, and interviews and workshops with experts from municipal government, utility companies, industry, and research institutes. The trans-disciplinary analysis allows development of a systemic understanding of success factors, barriers and local impact factors of each city. Study participants for workshops and interviews will be sampled from relevant institutions and organisations (public sector, companies, research institutions and civil society) identified through the contact with local representatives within the UNaLab project.

Step 3: Evaluation of collected data followed by delivery of a detailed assessment of the 'starting position' in each follower city.

T6.5.5 Replication Framework (TUE, DAPP, FHG, STU, STA, BAS, IPR, PRA, CAS, CAN, ESP,PRA, HON, ARU, UBA)
T6.5.5 will analyse the gap between the desired future vision (T6.5.3) and the 'starting position' of each follower city (T6.5.4) in order to develop city-specific roadmaps. The generic roadmap for Smart Urban Spaces (from R4E project) will be enhanced with climate and water resilience solutions from the *NBS Technical Handbook* (WP5). An analysis is made of the coverage of the cities' vision elements by described NBS solutions will be analysed and additional available NBS details added as necessary to complement the generic roadmap and *NBS Technical Handbook*. In a 2-day roadmap workshop with all relevant stakeholders within the follower cities, one or several NBS will be selected and enhanced with the respective business and financing models, as well as municipal governance guidelines. The result of this subtask will be comprehensive roadmaps for NBS replication (one per follower city) tailored to their specific context of each city and containing a set of projects to be implemented that will be placed on a timeline to provide insight in the required steps and a set of clearly milestones towards the desired future scenario. The results will be presented in a 1-day Joint Roadmap Workshop with all UNaLab cities (hosted by one of the front-runner cities and planned in conjunction with M36 General Assembly), where the cities will learn from one another's roadmaps and identify opportunities for joint projects to implement relevant NBS.

T6.6 Exploitation and Technology Transfer (DAPP, TUE, FHG, VTT, STU, EIN, GEN, TRE, STA, BAS, IPR, PRA, IRE, CAS, CAN*, ESP,PRA, HON, ARU, UBA*)
Exploitation and technology transfer within the UNaLab project will be ensured by the means of regular exploitation and technology workshops where front-runner, follower and non-EU follower cities as well as cities beyond the consortium will take part, leveraging the buddy system which represents formal mentoring of follower cities by front-runner cities.

T6.6.1 Buddy System (DAPP, FHG, VTT, STU, EIN, GEN, TRE, STA, BAS, PRA, CAS, CAN, ESP, PRA, HON, ARU, UBA)
T6.6.1 will develop a buddy system for formal mentoring between front-runner and follower cities to maximise the learning curve. The buddy system will further enable the sharing of knowledge, ideas and experiences between participating cities. Each front-runner city will mentor 1-2 follower cities on the basis of similar framework conditions and interests. The task leader (DAPP) will develop a proposal for tandem activities which will be discussed at the Project Initiation Meeting. General requirements for the buddy system will be set up in a participatory approach with all cities as the basis for the bilateral definition of the cooperation. Buddies will be selected at the Joint Ambition Workshop (M12).

T6.6.2. Exploitation and Technology transfer Workshops (DAPP, TUE, FHG, VTT, STU, EIN, GEN, TRE, STA, BAS, IPR, PRA, IRE, CAS, CAN ,ESP,PRA, HON, ARU, UBA, ENoLL)
Exploitation and Technology Transfer Workshops for front-runner, follower and non-EU follower cities as well as cities beyond the consortium will be organised annually and complemented by web meetings and seminars. The discussion on NBS to be transferred, as well as related methodologies, models and services will be organised in groups, each including one front-runner and 2-3 followers, and ca. 15 cities from beyond the UNaLab consortium. Stakeholders of value chains will be invited to discuss the impact of preliminary-selected NBS and the feasibility to implement the value chains and related possible business models. Brainstorming on business modelling will be performed and the results will inform T6.1.

Milestones and deliverable

M6.1 Municipal Governance Guidelines released (FHG) (M15)

M6.2 Draft NBS replication business models & concept NBS Replication Framework provided to cities (FHG) (M18)

M6.3 Draft NBS Replication Framework released (FHG, M24)

M6.4 Final NBS Replication Framework & Handbook of Business, Finance and Government Models released (FHG, M60)

D6.1 Value chain analysis of selected NBS (DAPP): Value chain analysis of selected NBS and evaluation of replication / upscaling potential (R, PU, M15)

D6.2 Municipal Governance Guidelines (FHG; R, PU, M15)

D6.3 Business models & financing strategies (FHG): Business models & financing strategies to complement draft *NBS Technical Handbook* (R, PU, M18)

D6.4 NBS Value Model (FHG): NBS Value Model, referencing national and international policies to leverage financing (R, PU, M21)

D6.5 *NBS Replication Framework* (FHG) (D6.5, R, CO, M24 draft; D6.6, R, PU, M60 final)

D6.7 Replication Roadmaps Report (TUE): Report detailing individual NBS replication roadmaps for Başakşehir, Cannes, Castellon, Prague, Stavanger and Buenos Aires, and reporting on the Joint Roadmap Workshop (R, PU, M38)

D6.8 Exploitation Workshops (DAPP): Report on Exploitation Workshops (R, CO, M24, M36, M48, M60)

D6.9 Handbook (FHG): integration of WP6 deliverables into comprehensive *Handbook of Business, Finance, and Governance Models and Value Chain Analysis to Support NBS Implementation* (R, Pu, M60)

3.1.7 Work Package 7 – Dissemination & Communication

WP number	7							Start date or starting event					1		
WP title	Dissemination and Communication							Duration/ending month					60/60		
WP leader	ERRIN														
Part. number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Part. short name	VTT	FHG	EIN	GEN	TRE	STA	CAS	CAN	PRA	BAS	ENoLL	ERRIN	LAN	ENG	M3S
PM per part.	5	5	5	8	5	1	1	1	1	1	5	22	1	2	1
Part. number	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Part. short name	RAM	INN	IMP	DAPP	IRE	ESP	PRA	TUE	UAV	STU	LTU	ARU	HON	UBA	
PM per part.	1	1	1	2	1	1	1	1	1	1	1	1	4	1	

Objectives

WP7 will design and implement a communication strategy through which the consortium shares its results using a range of different channels and events. WP7 will establish dialogue with policy and industry stakeholders and the cooperation with other frameworks and existing initiatives, such as the Covenant of Mayors for Climate & Energy, the Green Digital Charter (GDC), EIP-SCC, EUROCITIES, EU Smart Cities Information System, ICT-PSP pilots, the CityProtocol, the Reference Framework for Sustainable Cities (RFSC), the Green Button, the Social Energy Collective, C40 Cities Climate Leadership Group, and others. Main objectives are:

- Ensure effective communication and information dissemination with stakeholders including UNaLab project results and awareness-raising for nature-based solutions (NBS);
- Guarantee maximum visibility for the UNaLab project, informing key stakeholders at local, regional, national, European and international levels of project results and outcomes
- Encourage active communication of the UNaLab project's processes and outputs to defined target groups and stakeholders such as cities' representatives, decision-makers, political representatives of local authorities, national and European institutions, industry representatives, research institutions, and other relevant actors and initiatives in order to promote the knowledge awareness and exploitation activities related to the project results;
- Actively scan and promote cooperation with other initiatives, projects and networks focused on Smart Cities solutions

Description of work

T7.1 Communication and Dissemination strategy (ERRIN, FHG, DAPP, All cities)

A Dissemination and Communication Plan will be delivered at the beginning of UNaLab and will be closely aligned with the other WPs activities, in particular with the replication and exploitation strategy developed in WP8. The Plan will constitute the core document outlining the activities, channels, tools and timing at the basis of the project's dissemination and communication strategy. Key stakeholders will be approached using a range of dissemination and communication tools, distribution channels and dedicated actions. We will employ a targeted approach to relevant stakeholders through persona analysis, structuring of the stakeholders and their content on the inverted pyramid, and a dedicated multiplier programme to

generate local engagement and geographical balance. The communication strategy will take into account the different actions that will be implemented at local, regional, national, European and international levels with varying levels of intensity in order to generate a cascade effect on multiple targets and facilitate different impacts, from consensus building, to awareness, acceptance and replication. Furthermore, a translation service in every participating city is planned in order to enable the communication and dissemination of the project's activities and outcomes at the local level and in the local language. This process will be strengthened through a strong visual identity for all communication and dissemination activities. The Plan will also define the internal consortium processes for the management of effective and efficient dissemination and communication activities at different geographical levels and assign precise roles and responsibilities to the partners under the coordination of the WP leader. The Plan will be subject to updates and revisions in order to fine-tune the dissemination objectives as the project progresses and include possible new targets, tools, channels and communication strategies to be implemented during the course of the project.

T7.2 Stakeholder engagement (GEN, EIN, ERRIN, TRE, STA, CAS, CAN, IPR, BAS, HON, UBA)

UNaLab partner cities will be actively involved in this task, led by GEN, in order to engage and communicate with all targeted stakeholders and create impact. An important part of the project's communication and dissemination effort is related to other frameworks and existing initiatives but also policy and industry stakeholders that are expected to have a considerable interest for the outcomes of the project. The exact number and nature of these stakeholders as well as the means for the dialogue with them will be finalised (detailed) during the compilation of the dissemination strategy. A contact database of different target groups will be established, including: experts working on related EU-level and international initiatives (e.g. City Protocol); local authority officers/experts and decision-makers; relevant local authority networks; European-level media outlets; and, European institutions. A continuous process of stakeholder management is planned:

- Multiplier programme - Professional networks are linked to the UNaLab project through a targeted multiplier programme. Through partnering cities, specific collaborative partnerships will be fostered with identified federations, associations and networks, in order to maximise the reach of the communication and dissemination activities to reach as many potential collaborators and target audiences at European, national and city levels. UNaLab partners' existing networks will be fully exploited in order to maximise the networking and knowledge sharing efforts around the UNaLab outcomes. Furthermore, the partnership will actively scan and integrate European projects and their results in the field of NBS from e.g. INTERREG, LIFE+, FP 7 and Horizon 2020, notably the SCC Nature Based calls as well as the Smart Cities projects such as CITYkeys and the Lighthouse projects.
- Interaction with the EC Expert Group on Nature-Based Solutions – UNaLab will freely share knowledge gained in the project and specifically engage with the EC Expert Group on Nature-Based Solutions in order to feed the European discussion on NBS, promote successful innovations from front-runner cities and co-created solutions, as well as to network with potential partners or peers and attract new private-sector funding for follow-up projects.
- Local stakeholder engagement - To disseminate results locally, cities will develop specialised actions (online webinars, collaborative spaces) in cooperation with the ULLs, to directly engage with local citizens and communicate project and NBS outcomes. Local activities will include liaising with existing events organised by the municipalities, schools, and colleges to promote the project and the cities' action, and will also link to Social media content. These will be developed at different levels of complexity in front-runner and follower cities.

T7.3 Communication and dissemination activities and tools (ERRIN, GEN, EIN, TRE)

The Dissemination strategy (T7.1) will define a range of target groups, appropriate dissemination tools and a timetable of project milestones that present ideal communication opportunities throughout the lifetime of the project. A combination of traditional (e.g. presentations at events, media material and scientific publications) and innovative dissemination tools (such as webinars) will be developed to exploit a diversity of information channels and address a broad range of target groups.

- UNaLab Website: ERRIN will create a webpage by M04 to present UNaLab project aims, developments and results. Dedicated web sections in local languages will also be implemented to support communications in each city and the exchange of information with other existing channels and tools. Website set-up, maintenance and implementation will be managed by ERRIN, with the cooperation of all other partners for content provision and population.
- Social media: Social media will be employed to raise awareness of the work undertaken by the project, facilitating connectedness between peers and making UNaLab project communication a participatory experience for citizens. A social media strategy will be developed at the beginning of the project with the aim to select the most suitable social media channels to be activated for the project (e.g. Twitter / Facebook / LinkedIn / other). In addition, existing discussion groups and communities will be identified through which the project will actively post news and discussion topics using a UNaLab account. The existing social media accounts directly managed by UNaLab partners will be further exploited to guarantee project outreach t to their established online communities.
- Project identity and media material: ERRIN will create the corporate identity of the UNaLab project including a logo, poster, and templates for PowerPoint presentations. A leaflet providing a basic overview of the project will be developed by M04 as a general project information tool. It will be produced in electronic and printed format. In addition a short project web video will be produced at M06 to present the project using easy-to-understand

animations and info-graphics. The video will be accessible via the website, distributed via social media and other sector-related communication portals and platforms, and will also be used at events to present the project.

- Press relations: UNaLab partners will regularly post articles on the project's progress on their own website and in their current media tools, e.g. as monthly newsletters. Dissemination will also target EU-level media to suggest featuring UNaLab in their publications.
- Publications: High-gloss thematic brochures, case study outreach documents, and compendia will be prepared to present information on the UNaLab front-runner and follower cities NBS activities and plans. These publications will be intended for a carefully selected target audience and will serve several purposes, based upon which the content will be adjusted. Namely, they will serve to: present and explain the main policy and technological developments in NBS; summarise NBS outcomes in UNaLab front-runner cities; and provide an overview of replication methods. An online copy of each publication will be available for download. These online publications will be published in a dedicated section of the project website, which will provide an executive summary in HTML format, a download link, links to all cited projects or other relevant sources cited in the publication, and a keyword pool to maximise exposure.
- Citizen engagement tools and activities: Citizen engagement activities will be primarily developed at the local level, and promoted via the official UNaLab distribution channels (website and social media); however, specific citizen engagement campaigns will be designed at the central level to bring UNaLab to the attention of a wider EU audience and increase project outreach and impacts. This will include, e.g.: targeted social media campaigns, call-to-action videos, organisation of hot-spots such as contests or open-house events taking place in different cities simultaneously, world or European 'Urban Nature' days to create a wider impact at EU level, and will be widely promoted using different online, offline and social media channels in close cooperation with UNaLab cities' channels. Engagement campaigns will be planned each year as part of the Dissemination and Communication strategy updates.

T7.4 Scientific dissemination and promotional activities (ERRIN, All Partners)

- Presence at industry trade fairs, exhibitions and conferences: Relevant conferences and participants will be strategically identified to introduce the front-runner cities to various closely related initiatives and broaden the multiplier reach. Recognising the importance of reaching the appropriate audiences with suitable presence, while maintaining efficiency and cost-effectiveness, relevant project experts will participate in events with the following purposes in mind: promotion of the website and front-runner/follower cities; dissemination of publications, flyers, other materials and outcomes; and recruitment of stakeholders and multipliers. Relevant events include, e.g. Smart City Expo; URBACT City Festival; Energy Cities' Annual Conference; EUROCITIES' Annual Meeting; Green Infrastructure Conference; European Ecosystem Services Conference, China-Europe Water Platform, etc.
- Scientific publications: The consortium will target publish the project results in at least 10 articles in trade and scientific journals, as open access publications based on OA availability.
- Support for organisation of local events: Cities will support local events in front-runner and follower cities using a dedicated communication and promotional package to extend the reach of UNaLab locally and communicate with local communities in their respective language. By connecting with other NBS initiatives and partners, a multiplication effect of the communication activities is ensured, spanning from local media coverage to the EU level.
- Webinars: Online meetings will be used for internal dissemination of UNaLab activities and outcomes to ensure efficient use of time, minimise unnecessary travel and take advantage of modern communication technology. Three to six dissemination-focused webinars will be held in English, organised by ERRIN with the support of all project partners. Webinars may also be used to conduct targeted online symposia, e.g. for landscape architects and/or urban ecologists to learn more about NBS.
- Final event: A final, one-day replication event hosted by EIN with support from VTT and ERRIN, as well as other UNaLab partners, will take place near the end of the project to widely disseminate UNaLab results. To ensure high visibility and attract a large audience for the event, as well as to support dissemination and outreach at the EU level, the final event may be linked with another relevant event.

Task 7.5: Fostering Replication (ERRIN, FHG, DAPP, EIN, GEN, TRE)

Dedicated replication-oriented tools will be generated to maximise replication and longer-term impact of UNaLab, including:

- Packaging of information – For example, fact sheets, dedicated articles and news releases, business and financial model descriptions, infographics, posters, etc. specific in support of replication and exploitation, to be disseminated towards cities, potential NBS adopters and end-users. Contents will be selected from UNaLab public deliverables. Continuous management and packaging of contents in different formats according to specific dissemination needs and audiences will be guaranteed for each specific project outcome (deliverables, results from demonstrations, etc.).
- Best practices kit – A short publication highlighting the results of the project in the form of best practices and guidelines for wider adoption and distribution will be issued at the end of the project, referencing handbooks, guidelines and end-user tools developed in UNaLab. The publication will include a synthesis of recommendations and guidelines developed as a result of ULL demonstrations and models developed during UNaLab in non-technical language. This kit will have different

modules targeted to various stakeholder groups. The best practices kit will be publicly available in electronic format on the website. The best practices content will be developed throughout the UNaLab project and packaged by the WP7 leader.

Deliverables & Milestones

M7.1 Dissemination and Communication strategy ready including target stakeholders mapping (M2)

M7.2 Website launched, project identity, leaflet and short video ready (M6)

M7.3 End of Project (M60).

D7.1 Stakeholders and target groups (GEN): A contact database of different target groups, including experts working on the different EU-level initiatives as well as international initiatives (R, CO, M1)

D7.2 Dissemination and Communication strategy and updates (ERRIN; R, CO, M2, M30, M45)

D7.3 UNaLab Project identity (ERRIN): corporate identity of the UNaLab project including a logo, poster and templates for PowerPoint presentations. (DEC, PU, M2)

D7.4 Website, project leaflet and poster (ERRIN, DEC, PU, M4)

D7.5 UNaLab project short video (ERRIN, DEC, PU, M6)

D7.6 Dissemination and Communication activities report: Report on all dissemination and communication activities and impacts (ERRIN, R, CO, M18, M36, M54)

D7.7 Production of NBS Replication Packages for dissemination (ERRIN) (M36, M48, M60)

D7.8 Production of *UNaLab NBS Best Practices Kit* using content from WPs 2-6 (ERRIN) (M60)

D7.9 Final report on Dissemination and Communication activities: analysis of the impacts generated via the implementation of the dissemination, communication and replication strategies adopted by UNaLab (M60)

Table 3.1b: List of work packages

Work package number	Work Package Title	Lead Participant No	Lead Participant Short Name	Person-Months	Start Month	End month
1	Project Management	1	VTT	64	1	60
2	Living Lab & Co-Creation Models & Tools	11	ENoLL	123	1	50
3	Monitoring & Impact Assessment	24	UAV	136	1	60
4	Data Management Platform & Tools	14	ENG	169	1	60
5	Climate & Water Resilient Urban Living Labs	1	VTT	245	1	60
6	Planning for Effective Up-Scaling and Replication	2	FHG	293	1	60
7	Dissemination & Communication	12	ERRIN	81	1	60
				1087		

Table 3.1c: List of Deliverables

Deliverable		Work package number	Short name of lead participant	Type	Dissemination level	Delivery date
no	name					
D1.1	Kick-off meeting report, Advisory Board nominations, financial & technical agreements	1	VTT	R	CO	M2
D1.2	Project guidelines	1	VTT	R	CO	M2
D1.3	Internal document sharing system	1	VTT	Other	CO	M2
D1.4	Ethics advisor CV and role description	1	FHG	R	CO	M3
D1.5	Internal Ethics Guideline for involving humans	1	FHG	R	CO	M6
D1.6	Ethical approvals for personal data collection	1	FHG	R	CO	M6
D1.9	DMP - Data Management Plan	1	FHG	R	CO	M6, M12, M24
D2.1	UNaLab ULL framework	2	ENoLL	R	CO	M9

D2.2	Report on EASW scenario building workshop training and co-creation workshops	2	EIN	R	CO	M15
D2.3	UNaLab ULL online toolkit	2	ENoLL	Other	PU	M30
D2.4	UNaLab Living Lab Handbook	2	LTU	R	PU	M36
D2.5	Implementation and adoption barriers to ULL for NBS	2	TUE	R	PU	M50
D3.1	NBS performance and impact monitoring protocols	3	VTT	R	CO	M21
D3.2	SDST user guide for municipalities	3	UAV	R	PU	M36
D3.3	Report on the integrated model refinement for touch tables for public use (UAV)	3	ENG	R	CO	M48
D3.4	Assessment of NBS Demonstrations	3	UAV	R	PU	M58
D3.5	Critical review of measured impacts of NBS	3	VTT	R	PU	M60
D4.1	UNaLab ICT framework architecture & asset integration guidelines	4	ENG	R	CO	M12
D4.2	Prototype systemic decision support tool with geovisualisation capability	4	ENG	DEM	PU	M14
D4.3	UNaLab Data Management tools	4	ENG	DEM	CO	M24
D4.4	Open Innovation/crowdsourcing and performance measurement tools (ENG)	4	VTT	DEM	CO	M24
D4.5	Installation of touch tables with geovisualisation tools and SDST simulation	4	ENG	DEM	PU	M36
D4.6	Handbook of UNaLab Framework setup and integration guidelines	4	ENG	R	PU	M60
D5.1	Interim NBS Technical Handbook	5	STU	R	CO	M12
D5.2	Municipal governance recommendations for front-runner cities	5	FHG	R	CO	M12
D5.3	Preliminary NBS Implementation Handbook	5	VTT	R	CO	M36
D5.4	ULL NBS demonstration site start-up report	5	VTT	R	PU	M42
D5.5	NBS implementation handbook (FHG) draft	5	VTT	R	CO	M36
D5.6	NBS implementation handbook (FHG) final	5	VTT	R	PU	M60
D6.1	Value chain analysis of selected NBS	6	DAPP	R	PU	M15
D6.2	Municipal Governance Guidelines	6	FHG	R	PU	M15
D6.3	Business models & financing strategies	6	FHG	R	PU	M18
D6.4	NBS Value Model	6	FHG	R	PU	M21
D6.5	NBS Replication Framework – Draft	6	FHG	R	CO	M24
D6.6	NBS Replication Framework - Final	6	FHG	R	PU	M60
D6.7	D6.6 Replication Roadmaps Report	6	TUE	R	PU	M38
D6.8	Exploitation Workshops	6	DAPP	R	CO	M24, M36, M48, M60
D6.9	Handbook of Business, Finance, and Governance Models	6	FHG	R	PU	M60
D7.1	Stakeholders and target groups	7	GEN	R	CO	M1
D7.2	Dissemination and Communication strategy and updates	7	ERRIN	R	CO	M2, M30, M45
D7.3	UNaLab Project identity	7	ERRIN	DEC	PU	M2
D7.4	Website, project leaflet and poster	7	ERRIN	DEC	PU	M4
D7.5	UNaLab project short video	7	ERRIN	DEC	PU	M6
D7.6	Dissemination and Communication activities report	7	ERRIN	R	CO	M18, M36, M54
D7.7	Production of NBS Replication Packages for dissemination	7	ERRIN	R	PU	M36, M48, M60
D7.8	UNaLab NBS Best Practices Kit	7	ERRIN	R	PU	M60
D7.9	Final report on Dissemination and Communication activities	7	ERRIN	R	CO	M60

3.2 Management structure, procedures, and milestones

3.2.1 Organisational structure and decision-making

3.2.1.1 Management structure and procedures

The consortium has put great care in defining the most appropriate management structure for the project following the rules described in the H2020 Model Grant Agreement and in the DESCA model Consortium Agreement. This involves the appointment of an experienced Project Coordinator, and a Management Structure. The organisation structure accommodated coordinated management of a complex project, where technical, demonstration, replication and dissemination issues are systematically addressed to ensure smooth project operation and maximum impact. The project management system will provide fully transparent oversight of project time and resource allocation and budget tracking. *FIGURE 13* shows the UNaLab organisational structure. The management structure, procedures and roles of main entities are further described in this section.

Project coordinator Dr Miimu Airaksinen, Research Professor and Programme Manager of Smart Energy and System Integration at VTT, has experience on several national and international RTD projects in the Smart Cities domain, including coordination of the H2020 project CITYkeys and participation in BlueSCities: The coordinator is also a Sherpa for the EIP SCC and a Policy adviser for UN Habitat in Policy Unit 9 on urban services and technologies including smart cities. In addition the coordination team includes a member of the EIP Water Steering Group, MC member of the Cost 2020 water group and vice-MC in EUBIS Cost Action on Utilisation of organic sidestreams. These high-level action memberships confer a clear advantage in liaison with stakeholders and knowledge sharing. The VTT coordination team also includes a dedicated Financial Officer as well as technical experts.

The project coordinator will be closely supported by Alanus von Radecki (FHG) as Quality Manager, Ethics Manager and Replication Manager, who has extensive experience in quality management, ethics management and stakeholder management as well as in coordination of international projects. von Radecki has been the project leader of the innovation network “Morgenstadt: City Insights” and acted as project coordinator in the initial phase of the EU Smart City Lighthouse project TRIANGULUM where he is developing a replication framework for Smart City on the basis of a novel value model. He has strong expertise in developing strategies and roadmaps for the integrated sustainable development of cities, based on innovative financing strategies and business models. Moreover, Alanus von Radecki is also involved in the replication activities of the EU project TRIANGULUM.

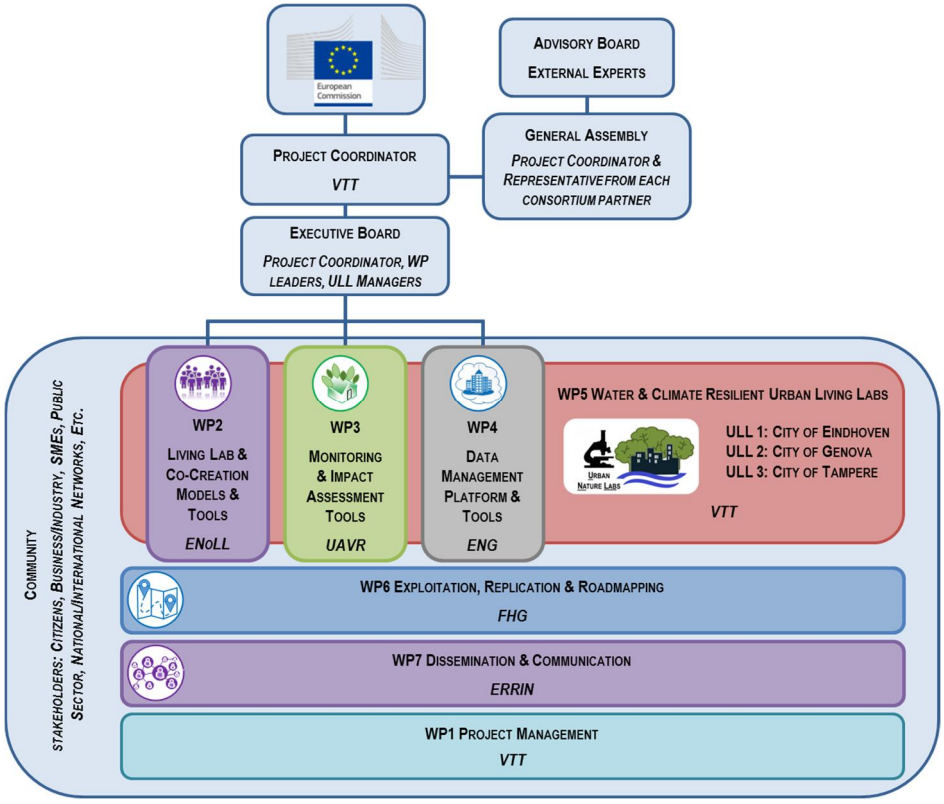


FIGURE 13. UNALAB ORGANISATIONAL STRUCTURE

In addition to the two primary management bodies (General Assembly and Executive Board), additional management bodies have been defined:

- The teams for the Living Labs comprised of representatives of participants in each of the ULL for NBS demonstration in front-runner cities, coordinated by a local ULL Manager.

- The Work Package teams, one per WP, comprised of representatives of participants in the respective WP. These WP teams are led by the WP Leaders and Task Leaders.
- Advisory Board. The Advisory Board will be the structure through which external experts recruited from related projects critically review and advice UNaLab. Chaired by the Project Coordinator.

UNaLab project management includes addressing all administrative, financial and contractual issues. Project management has a specific work package (WP1) and is primarily carried out by the Project Coordinator (VTT) to ensure efficient progress towards project objectives. The Coordinator is strongly supported by FHG as Quality and Ethics Manager and Replication Manager, by the UNaLab Exploitation Manager (DAPP), by WP leaders, and by the commitment of all consortium members.

Effective management will ensure efficient working processes and high-quality project outcomes through:

- competent execution of overall project coordination ensuring quality management, risk management, financial management, ethics and data management, continuous progress monitoring, and corrective actions as required;
- use of formal communication frameworks to ensure efficient communication processes and appropriate information flows within the project, between the project and the Commission and to the general public;
- active innovation management (section 3.2.7).

Urban Living Lab (ULL) Teams and Managers: UNaLab will implement NBS demonstration ULLs in three front-runner cities. Each NBS installation will have an implementation team comprised of local stakeholders and representatives from the respective local partner institutions and municipalities.

ULL Managers. UNaLab project coordination will further be strengthened through support of a local Manager of each front-runner city ULL. The ULL Manager is responsible for daily coordination between UNaLab and the local ecosystem. The ULL Manager must inform the Project Coordinator and Executive Board of the ULL progress on a six-monthly basis. The local ULL Managers coordinate the Local ULL Team and participate in the project Executive Board as representatives of their respective municipality:

- ULL Eindhoven: Mr Anthony van de Ven, EINDHOVEN CITY COUNCIL
- ULL Genova: Mrs Manca Stefania, GENOVA CITY COUNCIL
- ULL Tampere: Mrs Kirsti Toivonen, TAMPERE CITY COUNCIL

Work Package Leaders (WLs) – The WLs (*TABLE 7*) undertake day-to-day coordination (including planning, monitoring and control) of all tasks within their respective work package). The WLs ensure the quality of WP deliverables and submit these in due time to the Project Coordinator for peer review. WLs have technical responsibility for their respective WP and will keep the Executive Board and the Project Coordinator informed of technical results of the project as well as any risks or concerns. The WL will develop the overall execution plan for their respective WP, assuring consistency between tasks and alignment with related WPs. When necessary the WL will arrange meetings with the other partners involved in the WP, typically be in the context of consortium meetings or as teleconferences.

Task leaders (TLs) – Supervised by the WLs, each TL will prepare a detailed work plan agreed within the task team during the first month of the task. The detailed work plan shall be iteratively revised to encompass a period at least 6 months in advance, and shall include identification of significant initiatives, e.g. EU projects, relevant to the respective task along with a plan for knowledge sharing and the potential for linkage formation between UNaLab and identified initiatives. During the task, the TL is responsible for achieving the specified milestones and generating specified deliverables within the given timeframe. The TL will provide leadership and on-going monitoring of task progress.

UNaLab partner self-management – UNaLab partners are responsible for:

- Effective economic management and conduct of the operational work in accordance with the program guidelines and with ethical and legal standards;
- Compliance with general terms and conditions governing grants and any terms and conditions specific to each grant or granting programme established by the European Commission;
- Managing and supervising operational personnel;
- Meeting reporting requirements specific to H2020 and the call;
- Acknowledging, whenever possible, Coordinator's financial support for the operational work.

TABLE 7. SUMMARY OF THE DIVISION OF WORK PACKAGE LEADER ROLES IN THE UNALAB CONSORTIUM

	WP1	WP2	WP3	WP4	WP5	WP6	WP7
WP leaders	Dr/Mrs Miimu Airaksinen	Mrs Ana Garcia	Dr/Mr Peter Roebeling	Mr Giovanni Aiello	Dr/Mrs Laura Wendling	Mr Alanus von Radecki	Mr Ryan Titley
	VTT	ENoLL	UAVR	ENG	VTT	FHG	ERRIN

Advisory Board – The Advisory Board will be the mechanism through which external experts are recruited from related projects and initiatives in the field of smart cities, urban water management and urban ecology to provide critical evaluation, advice and feedback on the main issues arising during the UNaLab project. The main goals of this board will be:

- Providing evaluation and feedback with respect to project objectives;
- Monitoring the main project milestones, updating feedback, and providing necessary inputs to guide the project towards the achievement of main objectives;
- Providing critical assessment of project outcomes and assisting with definition of related future actions.

The UNaLab Advisory Board consists of the following confirmed experts (additional Advisory Group members may be added as the project progresses):

- Mr. Seppo Haataja, Director of Open and Agile Smart Cities (OASC) initiative
- Prof./Mrs. Brigitte Bach, Joint Programme Manager of EERA Smart Cities
- Mr. Richard Elelman, founder & Director General of the Network for Water in European Regions and Cities, NETWERC H2O
- Mrs. Isabel Fills, Network of Brazilian Intelligent Cities
- Prof./Mr. Jurgen Brueste, President of Society for Urban Ecology (SURE)
- Prof./Mr. Shu-Wei Wu, ARUP Hong Kong, Foresight, Research and Innovation
- Assoc. Prof./Mr. Martin Brynskov, Chair of Open, Agile and Smart Cities (OASC) Initiative & Research Director of Aarhus University Smart Cities

3.2.1.2 Working procedures

Internal communication – All participants will have access to all project documents. Regular, transparent communication and knowledge sharing among consortium members will ensure effective cooperation across all WPs. The internal web-based collaboration platform will facilitate internal communication and document sharing between consortium partners and ensure that all participants remain informed of project-related news, events and outstanding issues. The Project Coordinator, supported by the VTT team and Quality Manager, will provide practical guidelines for reporting, communication, quality assurance procedures, risk identification and mitigation, and other relevant internal processes.

Preparation of deliverables – During the first month of every task, a detailed plan for the task will be prepared as a deliverable template including a Table of Contents, responsibilities of individual participants, and detailed instructions for participants. All project reports will be presented in a standard format and will include a document control sheet which provides details concerning issue dates, revisions, authors and confidentiality classification. All documents will be made available to all partners on the aforementioned internal data sharing platform. Public reports and deliverables will be available on the project website.

Quality assurance (QA) – The Project Coordinator and the Quality Manager, together with WLs, act as the internal quality assurance group. The main task of the internal quality assurance group is to ensure that the milestones and deliverables are generated on time, and that these meet project standards for technical content, completeness, uniformity of coverage, presentation and format. Quality of outputs and deliverables will be assured through a two-level quality control process, overseen by the Quality Manager:

- Verification Control: University of Stuttgart will ensure that existing standards in the water sector are met within the projects. In UNaLab the University of Stuttgart helps to identify gaps within existing standards and works towards a rationalisation of standards together with EU bodies and further verifiers across Europe.
- Internal Quality control: While the respective WP leaders and VTT as project coordinator have the ultimate responsibility for the UNaLab outputs, an internal peer review system will be set up among partners to ensure a high quality of all deliverables. The peer review will be heavily based upon on-site assessment and cross-partner evaluation. This system will allow Follower Cities and Front-runner Cities to engage in direct dialogue on the NBS and the work progress. The WP leaders will be responsible for incorporating the peer review feedback into the final versions of their deliverables.

Consortium Agreement – A consortium agreement will be developed between UNaLab partners prior to the initiation of the project. Inter alia it will detail the following:

- Assigned responsibilities of Project Coordinator, EB, WLs, individual consortium partners;
- Meeting and reporting requirements, along with the mechanisms of accepting deliverables;
- Conflict resolution;
- Internal and external communication strategy;
- Administrative and financial procedures;
- Handling of IPR related issues.

Conflict resolution – Any conflicts arising during the project will be resolved by consensus wherever possible. Should the conflicting parties not be able to achieve consensus, the Project Coordinator will mediate. The next stage would be to discuss the conflict at the General Assembly level. Should consensus remain unattainable, the Steering Committee will try to achieve consensus via further moderation. In the absence of an agreement, a majority vote will be used to resolve the dispute, wherein each member will hold one vote and the Project Coordinator will hold a deciding vote in the case of a tied vote. In the case of

persistent disputes, the consortium would inform the Project Officer, solicit the advice of reviewers and call for an extraordinary meeting. Conflict resolution will be guided by the Consortium Agreement.

3.2.1.3 Progress monitoring and reporting

Milestone Reviews – During on-going work, the WLs shall report monthly regarding progress towards milestones and deliverables. In the lead-up to a milestone deadline, the relevant WL shall inform the Project Coordinator and Quality Manager of the progress towards achieving the milestone. The EB will critically examine the reported progress in comparison to the milestone description and previously agreed work plans. If necessary, the EB will take action to correct any discrepancy. In case of significant issues related to milestone delivery or risks the Project Coordinator shall consult with the EC regarding actions to achieve resolution.

Internal Monitoring of Technical Progress – Internal monitoring will occur by means of monthly progress summary reports from each WL presenting the status of active tasks in the respective WP. Reports will summarise: achievements, issues or obstacles encountered during the preceding month, as well as plans and any foreseen challenges for the forthcoming month (i.e. via SWOT = strengths, weaknesses, opportunities, threats). The report will be presented to facilitate easy follow-up regarding compliance and/or deviations.

Full Periodic Progress Reports to the EC – Periodic progress reports will be derived from internal monitoring reports to include all aspects of UNaLab project progress: technical and scientific, dissemination and communication activities, management actions, financial status, progress with respect to project scheduling, deliverables, milestones, etc.

Financial Reporting – The Project Coordinator will prepare a consolidated overview of the project budget, on the basis of statements of expenditure received from project partners and payments received from the EC. The budgetary status will be compared with the initial planned annual project costs to be determined during the UNaLab initiation phase of the project. Detailed reporting guidelines will be provided by the Project Coordinator to all project partners following project initiation.

3.2.1.4 Project Meetings

Project meetings can be conducted either with all participants occupying the same physical place, or as teleconferences, video meetings, Webex meetings or similar. Meetings of the different bodies in the UNaLab project are planned throughout the project, on the following basis:

Initiation Meeting and General Assembly Meetings – Representatives of all partners will attend the initiation meeting and subsequent General Assembly meetings to ensure balanced discussion and equal input to decisions by all consortium members. Decisions will be made on a consensus basis wherever possible and if not possible a majority rule will be employed. The initiation meeting will detail the work plan, with focus on review of tasks starting within the first quarter. The draft project guideline will be presented for comment and endorsement. The Project Coordinator will be responsible for organising this meeting and preparing the minutes. General Assembly meetings will occur annually. At the close of each meeting, the date of the next regular meeting will be fixed. The minutes of each meeting will be forwarded to all UNaLab consortium members by the Project Coordinator for approval within two weeks after the meeting. The minutes will be assumed to be approved if no comments are received within ten calendar days following circulation of the minutes. A copy of the approved minutes will be sent to the EC.

Executive Board Meetings – Executive Board meetings will be conducted at least twice per year for detailed discussion of cross-WP technical issues. All project personnel are welcome attend EB meetings as observers. At least two of the regularly scheduled EB meetings will be held as teleconferences. The other meetings will be rotated at different partner venues and will be combined with workshops featuring external experts. The hosting organisation will be responsible for preparing the minutes of the respective EB meeting and circulating to EB members within two weeks of the EB meeting for approval. The minutes will be assumed to be approved if no comments are received within ten calendar days following circulation of the minutes. A copy of the approved minutes will be sent to the EC.

EC Reviews – Mid-term and final project reviews will be arranged by the Project Coordinator and conducted with the EC.

Technical Working Meetings of WPs – To be arranged on an as-needed basis, with three technical working meetings per WP planned during the UNaLab project. Wherever possible, these meetings shall be organised in conjunction with General Assembly meetings or as teleconferences.

3.2.2 Innovation Management

The management practise of UNaLab will include several elements which all are essential to create working conditions which support innovation. The work plan and the quality of the consortium create the basis for innovations in UNaLab. The work plan addresses problems, defines goals, describes essential methods and provides a pathway towards innovation. The consortium is balanced to yield a suite of complementary knowledge, skills and expertise designed to stimulate innovative action. The Project Coordinator and all consortium members operate on the basis of shared trust, freely exchanging information and communicating openly to encourage and effectively manage innovation. UNaLab communication management and quality management will strictly adhere to these principles. An open, supportive working atmosphere is created and managed with

assistance from appropriate communication frameworks. The three main aspects explicitly accounted for in the innovation management framework are:

- *Organisational Structure* –innovation requires organisation at the coordinating level, operational level and support level. Thus, the UNaLab organisational structure defines the ULL Team, WLs and EB (operational level), the management team (support level), Project Coordinator, General Assembly and Advisory Board (coordinating level).
- *Internal Communication Flow* – open communication within the consortium is a key element of innovation management and decision-making, particularly in a consortium with a large number of partners where internal communication may become complicated. Thus, the chairpersons of the organisational bodies within UNaLab are specifically designated to facilitate the flow of information among project partners. Designated chairpersons have the necessary communication and management skills, as well as the flexibility to adapt to unexpected changes during the project.
- *Dissemination and Exploitation strategy* – the definition of the work plan is essential for achieving an effective innovation management system. During proposal preparation all consortium partners jointly defined Work Packages, project objectives and expected results, with particular attention to Dissemination and Exploitation tasks in order to achieve impact and market objectives. The effective support of the Exploitation Manager (DAPP) will be critical to efficient dissemination and exploitation of UNaLab project outcomes.

The following factors are considered significant success factors for the innovation management process in UNaLab:

- clear understanding of the problems to be solved;
- clear and ambitious goal setting;
- strategy that creates a path to achievement of goals;
- bringing together of interdisciplinary knowledge, skills and expertise and fostering conditions that support genuine cooperation;
- creating an atmosphere of trust and support that encourages creativity;
- instilling in partners the confidence to communicate openly;
- knowledge and availability of methods to support examination of preliminary solutions.

3.2.2.1 Management of knowledge and intellectual property

The management of knowledge and intellectual property falls under the domain of Project Management (WP1). Knowledge management is the on-going identification, tracking and registration of knowledge generated within the project. Some deliverables, in addition to being delivered to the EC, will be made publicly available on the project's web portal. The project rules for the management of knowledge and intellectual property will be clearly articulated in the Consortium Agreement, to be signed by all partners at the time of project initiation. The general principles for the management of knowledge and intellectual property are:

- Consistent rules for all partners;
- Confidentiality: during project duration and beyond, the partners shall treat as confidential any information, which is designated as property by the disclosing partner.
- Pre-existing knowledge: each partner is and remains the sole owner of its intellectual property and pre-existing know-how. The partners will identify and list any pre-existing know-how for which they may grant access rights for the purpose of the project. The partners agree that the access rights to the pre-existing know-how needed to carry out their respective work within the project shall be granted on a royalty-free basis. The parties shall identify the background IPR to which they are prepared to grant access rights.
- Ownership and protection of knowledge: the owner/s of the knowledge will belong to the partner/s generating, will be co-shared by the group of consortium members according the model defined (value of the background and foreground created) it or will be a joint ownership. Protection (patents, industrial secrets, software protection) will be planned accordingly.
- Rules concentrating on the principles and provisions considered necessary for an efficient cooperation and the appropriate use and dissemination of the results: the Coordination team, together with the Exploitation Manager, will provide guidelines for the rules that fit best the project consortium within the framework provided in the model contract. An active policy of protecting IP will be adopted where applicable. Considering the type of potential application, exploitation route, business model applied, different advanced IPR strategies will be prepared.

3.2.3 Milestones

Table 3.2a: List of milestones

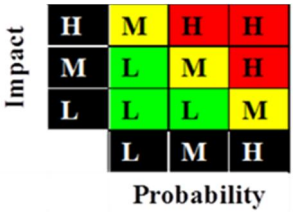
Milestone number	Milestone name	Related work package(s)	Est. date	Means of verification
1	UNaLab ICT framework architecture definition, Replication framework concept, Dissemination	WP1 (M1.1) WP4 (M4.1) WP7 (M7.1, M7.2)	M6	- Dissemination and Communication strategy ready including target stakeholders mapping - Project guidelines and data management plan released, Internal document sharing operational

	strategy and tools, and Project coordination framework			and ethics deliverables ready - Website launched, project identity, leaflet and short video ready - UNaLab framework architecture defined - NBS Replication Framework Concept presented to cities
2	UNaLab framework ready, NBS handbook and toolkit, Front runners monitoring baseline, training materials and Municipal governance recommendations.	WP2 (M2.1 M2.2, M2.3) WP3 (M3.1, M3.2) WP4 (M4.2) WP5 (M5.1, M5.3)	M12	- UNaLab ULL framework first version developed including plan for training, UNaLab ICT architecture refined, front-runner city assets integrated - Interim NBS Handbook completed - NBS technical implementation workshop for urban ecologists from front-runner and follower cities. - UNaLab ULL toolkit first versions ready. - Complete collection of existing 2015 baseline data for front-runner cities - Preliminary database of population growth and climate change scenarios for front-runner cities - Living Lab training material first version ready - Municipal governance recommendations for front-runner cities completed
3	Municipal Governance Guidelines, Prototype SDST geovisualisation software and Prototype UNaLab ICT framework tools. Training and co-creation workshops, KPIs selection for monitoring,	WP2 (M2.4 M2.5) WP3 (M3.3) WP4 (M4.3, M4.4) WP6 (D6.1, D6.2)	M18	- Prototype SDST geovisualisation software for front-runner cities - EASW training and co-creation workshops completed in all front-runner cities - Complete preliminary testing of biophysical NBS simulation results - Co-identification of KPIs and KIIs with key stakeholders in front-runner cities - Municipal Governance Guidelines released - Draft NBS replication business models provided to cities - Value chain analysis of selected NBS ready. - Living Lab training first rounds completed - Prototype UNaLab ICT framework tools & IoT harmonisation middleware prototype deployed
4	NBS data management tools and replication framework draft	WP4 (M4.5) WP6 (M6.3)	M24	- NBS data management tools developed for front-runner cities - NBS Replication Framework draft released
5	ULL Demonstrations	WP5 (M5.3)	M36	- Eindhoven, Tampere and Genova ULL demonstrations initiated
6	Update of NBS technical specifications including demonstrated NBS	WP5 (M5.4)	M54	- Update of NBS Technical Handbook including demonstrated NBS input to D5.4
7	NBS Replication Framework, Handbooks of Business and, Finance models, Governance Models and NBS Implementation.	WP5 (M5.6) WP6 (M6.4)	M60	- NBS Replication Framework finalised and released; Handbook of Business, Finance, and Governance Models released - NBS Implementation Handbook released

3.2.4 Significant Risks and mitigation measures

Risks are uncertain conditions that may have a degrading impact on the project performance. Project risks will be managed by the coordination tasks (WP1) in close collaboration with the Executive Board. A Risk Assessment Plan will be delivered by month 3 of the project and reviewed and updated together with the progress reports and periodic reports.

Risks can be quantified as:
Impact * Probability = Severity



Two types of risk management measures are applied in the project:

- Risk mitigation: pro-active measures to prevent problems; these are already embedded in the project plan: consortium composition and competence, quality assurance, risk management, internal progress monitoring, feedback from external stakeholders.
- Contingency actions: to be taken if the identified risks turn out to be real problems during project execution.

Table 3.2b: Critical risks for implementation

WP	Identified risks (Impact * Probability = Severity)	Mitigation and contingency plans
ALL	Weak commitment of participants to project plan and deadlines. Potential for serious delays as lack of progress in one or more tasks may cause delays for linked or subsequent tasks, and hence for the project. (L*M=L)	Efforts will be made in the beginning of the project to form a common understanding of and commitment to project goals. At the beginning of each task a detailed plan will be prepared and agreed with clear responsibilities allocated to all participants. Progress of all on-going tasks will be monitored and foreseen issues managed via brief monthly reports from TLs. Evolving deliverables will be followed to identify possible problems well in advance of deadlines. UNaLab quality manager will implement the project quality plan (PQP) in T1.4. UNaLab partners will communicate openly, and will support and encourage one another in order to meet shared goals.
ALL	Delayed transfer of information between WPs or poor quality of shared information. (M*M=M)	Built-in redundancy in the form of moderate overlap in partner effort occurs for tasks in the critical path to assure effective management of interdependencies. The detailed task plans created prior to task initiation will include definitions of interdependencies with other project activities. Important information transfers among WPs and between external stakeholders are defined as milestones and are reviewed by the EB. Deliverables will be peer-reviewed by a partner who is a main user/client of the information, e.g. leader of a dependent task.
WP1, WP6	Breach of IPR conditions per Consortium Agreement. (L*M=L)	EB is responsible for monitoring and managing IPR aspects throughout the project. Focus will be on innovative technologies still in TRL7. The project has a dedicated Exploitation and Technology Transfer manager (DAPP) and task (T6.7) that will work in close collaboration with the EB for all IPR issues.
WP1	Partner leaving the consortium. (L*M=L)	Built-in redundancy in the form of moderate overlap in partner effort occurs for tasks in the critical path to minimise the impact of a partner leaving the consortium. In the unlikely event that a partner departs for financial reasons, other consortium members can assume incomplete tasks initially assigned to the partner departing. If necessary a new consortium partner can be identified using the networks of remaining consortium partners.
WP2	Inadequate responses from or imbalance in domain topics from stakeholders during co-creation process. This can create challenges in defining a ULL framework that supports the replication strategy and results in a proactive go-to-market environment. (M*H=H)	There will be a close cooperation between all partners, external experts and advisory board for the development of the ULL framework. Particular focus will be on close collaboration between WP2, WP5 and WP6. There are several common partners between these WPs which optimises communication. To minimise the risk the involvement of all these partners is foreseen in planned co-creation workshops along with local stakeholders to yield a broad basis for identifying barriers, requirements and mitigation strategies. Additional input from thought leaders and other experts may be sought to supplement or inspire stakeholder ideas.

WP3	Lack of available data to measure KPIs. Previous projects (e.g. CITYkeys) have shown evidence of the challenges posed on data availability and reliability when monitoring progress in Smart Cities projects which causes risk to the monitoring tasks. (H*M=H)	The co-identification of KPIs and KIIs (T3.1) will occur in close collaboration with the partner cities in order to evaluate to what extent the required data are available and able to be collected during the project. The ICT framework (WP4) will support data management. If necessary, UNaLab experts will suggest modification of KPIs to suit locally-available resources and technologies, and will propose methods to consider the reliability of source data as part of KPI values. KPI-related recommendations will be integrated within roadmaps to highlight data requirements for KPIs and KIIs and ensure adequate resources are allocated for data collection along with funds for long-term system maintenance.
WP2, WP3, WP5	Assessment of NBS impacts after the interventions does not meet expectations. (L*M=L)	Consortium partners have extensive experience implementing NBS and participating in innovation projects, including scientific and technological know-how, expertise in the use of the ULL model, decision-making and monitoring tools, assuring that the final impacts are highly likely to meet performance expectations. Avoidance actions include informed decision-making and expert advising during the co-creation processes, including input of expert technical knowledge, operational procedures and innovative business models. Mitigation actions may include retrofitting or re-engineering underperforming systems, or implementing regular maintenance, to improve functionality and performance.
WP3	SDST tool functionalities are too complicated and not easily implemented by cities. (L*M=L)	Iterative testing of prototype tools will occur in NBS co-creation workshops in order to identify and rectify user issues. Wherever possible, tools for end-users will be based on well-known software to facilitate ease of use. Training will be provided for local 'expert users' of new tools in front-runner cities, who can then act as on-site experts. The ICT interface will be designed for non-expert users. An SDST user guide will provide step-by-step user instructions.
WP3, WP4	The SDST and the ICT framework are not ready on time, compromising the implementation in WP5 and the monitoring period. Also delays on the ICT framework delivery due to interdependencies with WP2 and WP3. (H*M=H)	The consortium partners are committed not only to provide two full years of monitoring of the activities, but to provide the means for cities to continue monitoring beyond the project timeframe. The SDST and the ICT platform supporting IoT and data management will be harmonised with existing city data management frameworks. Both are existing, proven technologies. The SDST is developed and requires only minor adaptation using locally-relevant data. The ICT platform will be similar to existing data management frameworks with minor adaptation to suit the ULL model.
WP4	Heterogeneity of existing urban platforms constrains replicability of Urban Platform developments (M*M=M)	The UNaLab ICT framework developments will follow an open requirements approach with the aim to maximise the replicability potential of the solutions, including the installation of the UNaLab cloud based FIWARE environment. The three Front-runner cities are pioneers in terms of Urban data platform developments, and have avoided vendor lock-in situations. Thus, Eindhoven, Tampere and Genova are experienced in the open specifications paradigm and in the necessary compliance with existing standards. To ensure the replicability of the concepts developed in the UNaLab, an adequate framework to prove interoperability between software modules in order to assess the effective management of components and information flows will be defined. Open data and open APIs are the core part of these.
WP5	Delays in the co-creation process or of NBS monitoring and assessment protocols. Low integration of the co-defined NBS for the demonstration of evidence at the front-runner cities (M*H=M)	The inputs from WP2 and WP6 will develop advanced co-creation methods for holistic NBS design and solutions for implementation practices in front-runner cities and replication in followers. Front-runner cities are strongly committed to NBS deployment and have allocated substantial resources of their own to realise urban re-naturing plans. Mitigation actions may include inviting city leaders to other urban NBS installations for inspiration and to motivate them to continue NBS deployment in their own city.

WP5	Delays in construction/implementation of the NBS solutions and in the demonstration activities (M*H=M)	The municipalities involved in UNaLab have long-term urban plans and the ULL activities committed in the project are part of these urban plans. The private partners involved are strongly committed to the project and count on the support of the municipalities. In addition the project plan (see Gantt chart) has carful integrated the demonstration period within the whole project life time, in order to create slacks of time for delays in construction, to assure the at least 2 full years' monitoring and time for disseminating results.
WP5, WP6	Potential gap between the defined processes/ business models, in the roadmap and the different stakeholders' processes (business-as-usual) can result into poor implementation/exploitation/replication of the project results. (M*M=M)	During the co-creation and the roadmap phase this gap between the new operational and governance models and the replicable business models and the stakeholders' current processes will be analysed. Reviews will be scheduled with local and EU level experts to achieve a major consensus over the adaptation of the processes or models developed to better fit stakeholder processes.
WP6	Replicability and roadmaps not implemented as expected	The strong replication strategy of UNaLab considers the close involvement of 7 follower cities and several observer cities. These cities have not yet acquired the full technical competence to become a front-runner city but they are strongly committed to build, within the consortium, the city-specific roadmaps. These will be closely aligned with the cities' strategic/urban development plans and supported by respective business and financing models as well as municipal governance guidelines. Implementation will be encouraged through the active participation of local industrial partners in the co-creation process and engagement of stakeholders in co-implementation. Intensive discussions and exchange of knowledge may serve to overcome barriers for investors and civil servants.
WP7	Difficulties in reaching a sufficient number of cities as part of the European networking activities to guarantee significate future replication (L*M=L)	Cities will be engaged via continuous communications and knowledge transfer activities at different geographical level also via major city associations acting at EU level. In case of insufficient coverage at European level, the focus of replication will be shifted on clusters of cities within the front-runner cities' regions, which are easier to reach.
WP7	Few participants at events (L*M=L)	If few key stakeholders or fewer overall participants than expected are registering for UNaLab events, the Dissemination and Communication manager (ERRIN) will actively exploit additional networks and channels to stimulate interest. In addition, all partners will activate their respective stakeholders' direct contacts.

3.3 Consortium as a whole

The composition of the UNaLab consortium corresponds to the required innovation and business knowledge and skills to achieve project objectives. The UNaLab consortium is comprised of 29 partners across 12 different European countries (FI, DE, NL, IT, PT, BE, SE, NO, TR, CZ, ES, and FR) and two non-EU countries (AR and CN) with additional observer participants from CN and BR. The consortium is well-balanced, representing key stakeholders within the value chain of urban challenges and smart, sustainable cities (public bodies, research institutions, large industries, small and medium enterprises; *TABLE 8*). Section 4 summarises the expertise of the involved partners as far as relevant for the tasks in this project. It also reveals the diversity of relevant experience of each partner, and how their combination of know-how and previous works is a key for the project success.

TABLE 8. BALANCE OF UNALAB CONSORTIUM BETWEEN SECTORS

PUBLIC BODIES	BUSINESS / INDUSTRY	SMES	RTOS	UNIVERSITY	PRIVATE NON-PROFIT	TOTAL
11	9	2	2	5	2	31

The partners as a whole embody scientific and technical excellence and are highly regarded within Europe and worldwide, due to their recognised expertise and achievements in research, innovation and industrial development for the sector in which they are leaders. Partners' main roles in the UNaLab project can be summarised as:

City entities: 11 public authorities, corresponding to 14 cities, will target NBS activities to actions described in each city's urban plan. The cities of Eindhoven, Tampere and Genova will act as front-runners implementing NBS and demonstrating their impacts while promoting ULL/NBS replication through close collaboration with follower cities. Follower cities of Stavanger, Başakşehir, Castellón, Cannes and Prague, as well as non-EU follower cities Buenos Aires and Hong Kong, will work productively with front-runner cities to analyse the integration of the ULL and NBS concepts via development of individual

roadmaps and their integration within cities' respective sustainable urban plans targeting improvements to governance, citizen engagement and business participation, e.g. through public-private partnerships. All cities will be involved in the co-creation of future visions and NBS co-definition; front-runners will also contribute to co-definition of monitoring and assessment indicators.

Research performers: VTT acts as the Project Coordinator, WP5 leader, and support the Tampere ULL. VTT leads development of a uniform performance and impact monitoring framework and assists in development of the ICT framework. FGG is Replication Manager and leader of WP6, and co-leads project coordination as Quality and Ethics Manager. LTU will adapt the ULL framework and associated tools, and identify ULL/NBS implementation barriers and recommendations to overcome barriers, in order to optimise the co-creation process. STU will deliver technical information to municipalities via the development of a NBS technical handbook. UAV will focus on SDST adaptation and geovisualisation tools, along with ENG, supporting co-creation and decision-making at the local level. TUE will manage roadmapping, working with follower cities to develop effective roadmaps, including NBS for climate and water resilience, aligned with each city's urban plan. HON will demonstrate NBS in Hong Kong, thereby contributing to replication and the creation of business opportunities beyond the EU.

Business partners: 11 business partners are involved in the ULL and NBS demonstrations: DAPP, as Exploitation Manager, leads dissemination and exploitation activities; ENG and M3S will develop ICT platforms and tools to support ULLs and real-time monitoring of NBS in cities; LAN, RAM, INN, IMP, IRE, ESP, PRA and UBA will largely focus on supporting ULL/NBS implementation in their respective local municipality, and will contribute particular expertise throughout the project as indicated in WP descriptions; Arup Hong Kong contribute to replication and the creation of NBS markets for European businesses through multiple urban development and urban greening projects in China.

Other: Two non-profit, private organisations contribute expertise to UNaLab. ENoLL leads WP2 and will further develop the ULL model and associated tools to best suit UNaLab / NBS co-creation and co-implementation. ERRIN leads WP7 and has a key role in communication, dissemination and replication, in particular through their network of >120 regional stakeholders.

TABLE 9 summarises the partners in terms of essential skills and expertise needed in the project. UNaLab represents a main opportunity to combine multidisciplinary knowledge across EU to develop and validate solutions that can be replicated on a global scale.

TABLE 9. CONTRIBUTION OF ESSENTIAL EXPERTISE BY UNALAB PARTNERS

		Stakeholder co-creation methods	ICT platforms and online tool development & ID/mitigation of technological barriers	ID & assessment of social barriers	NBS ecological &/or engineering specs. & design	Ecological-hydrological-climate-socioeconomic simulation modelling expertise	Roadmapping for exploitation, up-scaling, & replication	Business and finance models and frameworks	Models of governance	Regional & national networks (dissemination & BD)	International networks (dissemination & BD)
1	VTT		x		x	x		x	x	x	x
2	FHG						x	x	x	x	x
3	EIN	x		x					x	x	x
5	GEN	x		x					x	x	x
6	TRE	x		x	x				x	x	
10	STA	x		x	x				x	x	
17	CAS	x		x	x				x		
20	CAN	x		x					x	x	
14	IPR	x		x	x				x	x	
11	BAS	x		x			x		x	x	
8	ENoLL	x		x						x	x
12	ERRIN										x
23	LAN				x					x	
21	ENG		x							x	
22	M3S		x								
26	RAM		x		x	x					x
27	INN		x							x	
31	IMP							x		x	
15	DAPP			x			x	x	x	x	
16	IRE				x	x	x			x	x
13	ESP	x		x	x		x	x	x	x	x
19	PRA	x		x	x				x	x	
18	TUE	x		x					x		
4	UAV		x		x	x				x	
9	STU				x	x				x	
7	LTU	x		x				x	x	x	
28	ARU		x		x	x					x
25	HON			x							
24	UBA	x		x	x					x	x
29	GUA			x	x				x		
30	BRA	x		x					x		

The partners as a whole embody scientific and technical excellence and are highly regarded within Europe and worldwide, due to their recognised expertise and achievements in research, innovation and industrial development for the sector in which they are leaders. Partners' main roles in the UNaLab project can be summarised as:

City entities: 11 public authorities, corresponding to 14 cities, will target NBS activities to actions described in each city's urban plan. The cities of Eindhoven, Tampere and Genova will act as front-runners implementing NBS and demonstrating their impacts while promoting ULL/NBS replication through close collaboration with follower cities. Follower cities of Stavanger, Başakşehir, Castellón, Cannes and Prague, as well as non-EU follower cities Buenos Aires and Hong Kong, will work productively with front-runner cities to analyse the integration of the ULL and NBS concepts via development of individual roadmaps and their integration within cities' respective sustainable urban plans targeting improvements to governance, citizen engagement and business participation, e.g. through public-private partnerships. All cities will be involved in the co-creation of future visions and NBS co-definition; front-runners will also contribute to co-definition of monitoring and assessment indicators.

Research performers: VTT acts as the Project Coordinator, WP5 leader, and support the Tampere ULL. VTT leads development of a uniform performance and impact monitoring framework and assists in development of the ICT framework. FGG is Replication Manager and leader of WP6, and co-leads project coordination as Quality and Ethics Manager. LTU will adapt the ULL framework and associated tools, and identify ULL/NBS implementation barriers and recommendations to overcome barriers, in order to optimise the co-creation process. STU will deliver technical information to municipalities via the development of a NBS technical handbook. UAV will focus on SDST adaptation and geovisualisation tools, along with ENG, supporting co-creation and decision-making at the local level. TUE will manage roadmapping, working with follower cities to develop effective roadmaps, including NBS for climate and water resilience, aligned with each city's urban plan. HON will demonstrate NBS in Hong Kong, thereby contributing to replication and the creation of business opportunities beyond the EU.

Business partners: 11 business partners are involved in the ULL and NBS demonstrations: DAPP, as Exploitation Manager, leads dissemination and exploitation activities; ENG and M3S will develop ICT platforms and tools to support ULLs and real-time monitoring of NBS in cities; LAN, RAM, INN, IMP, IRE, ESP, PRA and UBA will largely focus on supporting ULL/NBS implementation in their respective local municipality, and will contribute particular expertise throughout the project as indicated in WP descriptions; Arup Hong Kong contribute to replication and the creation of NBS markets for European businesses through multiple urban development and urban greening projects in China.

Other: Two non-profit, private organisations contribute expertise to UNaLab. ENoLL leads WP2 and will further develop the ULL model and associated tools to best suit UNaLab / NBS co-creation and co-implementation. ERRIN leads WP7 and has a key role in communication, dissemination and replication, in particular through their network of >120 regional stakeholders.

3.4 Resources to be committed

UNaLab project involves 29 partners and 2 observers, committed for total eligible costs of € 14 781 423 and requested EC contribution of € 12 768 932. Partners will provide their own resources for the portion of the budget not covered by the EC contribution account for the necessary solvency and provision to cover those costs, thus completing the proposed tasks.

Table 3.4a: Summary of staff effort

	WP1	WP2	WP3	WP4	WP5	WP6	WP7	Total PMs per partner
1 VTT	26,0	0,0	19,0	22,0	20,0	5,0	5,0	97,0
2 FHG	8,0	0,0	0,0	0,0	12,0	25,0	5,0	50,0
3 EIN	2,0	10,0	6,0	0,0	35,0	5,0	5,0	63,0
4 GEN	2,0	6,0	6,0	0,0	35,0	5,0	8,0	62,0
5 TRE	2,0	6,0	6,0	0,0	35,0	5,0	5,0	59,0
6 STA	1,0	3,0	0,0	0,0	0,0	10,0	1,0	15,0
7 CAS	1,0	3,0	0,0	0,0	0,0	10,0	1,0	15,0
8 CAN	1,0	3,0	0,0	0,0	0,0	10,0	1,0	15,0
9 IPR	1,0	1,5	0,0	0,0	0,0	5,0	1,0	8,5
10 BAS	1,0	6,0	0,0	0,0	0,0	10,0	1,0	18,0
11 ENoLL	1,0	24,0	5,0	0,0	5,0	4,0	5,0	44,0
12 ERRIN	1,0	0,0	0,0	0,0	0,0	5,0	22,0	28,0
13 LAN	1,0	0,0	0,0	0,0	9,0	1,0	1,0	12,0
14 ENG	1,0	4,0	15,0	88,0	0,0	0,0	1,0	109,0
15 M3S	1,0	0,0	0,0	35,0	0,0	0,0	1,0	37,0
16 RAM	1,0	0,0	0,0	0,0	22,0	0,0	1,0	24,0
17 INN	1,0	1,0	9,0	12,0	13,0	0,0	1,0	37,0
18 IMP	1,0	1,0	1,0	1,0	13,0	0,0	1,0	18,0

19 DAPP	1,0	3,0	5,0	0,0	3,0	35,0	2,0	49,0
20 IRE	1,0	3,0	6,0	0,0	25,0	3,0	1,0	39,0
21 ESP	1,0	6,0	0,0	0,0	0,0	5,0	1,0	13,0
22 PRA	1,0	1,5	0,0	0,0	0,0	5,0	1,0	8,5
23 TUE	1,0	6,0	2,0	4,0	2,0	30,0	1,0	46,0
24 UAV	1,0	12,0	44,0	7,0	11,0	5,0	1,0	81,0
25 STU	1,0	0,0	12,0	0,0	20,0	30,0	1,0	64,0
26 LTU	1,0	20,0	0,0	0,0	3,0	0,0	1,0	1,0
*27 ARU **	*1,0*	*0,0*	*0,0*	*0,0*	*0,0*	*24,0*	*1,0*	*26,0*
*28 HON ***	*1,0*	*0,0*	*0,0*	*0,0*	*0,0*	*46,0*	*4,0*	*51,0*
29 UBA	1,0	3,0	0,0	0,0	0,0	10,0	1,0	15,0
TOTAL	64,0	123,0	136,0	169,0	263,0	293,0	81,0	1105,0

* 27 ARU, ARUP Hong Kong 27 ARU person-months are their own contribution

** 28 HON, Hong Kong Polytechnic University is funded by matching funding from China

As shown in table 3.4a the overall effort of the project is 1 087 person-months across 60 calendar months. The table below further details the costs. When co-creating new innovative Nature Based Solutions, it is important that cities and industry have a strong role in creating impact with innovation and knowledge institutes. Therefore from the EC requested budget 36% is allocated to cities, 40% for companies including SMEs and 24% for research and knowledge institutes. It should be noted that the exploitation, market deployment, dissemination and training activities have been highlighted as integral within the workplan, and the distribution of effort towards these activities is considered appropriate and essential for their successful completion. Therefore 68% of the total effort is dedicated to these activities including city demonstrations of Nature-Based Solutions and Urban Living Labs (WP2, WP5, WP6 and WP7).

	1 VTT	2 FHG	3 EIN	4 GEN	5 TRE	6 STA	7 CAS	8 CAN	9 IPR	10 BAS
Personnel	824 500	435 000	493 000	270 750	486 000	150 000	60 000	60 000	25 500	54 000
Travel	25 000	25 000	25 000	25 000	25 000	9 000	9 000	9 000	9 000	9 000
Equipment	0	0	8 700	8 700	8 700	0	0	0	0	0
Other goods and serv.	43 000	20 500	420 000	905 000	455 000	0	0	0	0	0
Subcontracting	0	0	550 000	0	145 000	0	0	0	0	0
Indirect costs	223 125	120 125	247 300	302 363	243 675	39 750	17 250	17 250	8 625	15 750
Total eligible cost	1 115 625	600 625	1 786 500	1 786 500	1 438 375	198 750	86 250	86 250	43 125	78 750
Req.EU Contribution	1 115 625	600 625	1 786 500	1 786 500	1 438 375	198 750	86 250	86 250	43 125	78 750

	11 ENoLL	12 ERRIN	13 LAN	14 ENG	16 M3S	16 RAM	17 INN	18 IMP	19 DAPP	20 IRE
Personnel	330 000	182 000	120 000	545 000	185 000	204 000	201 280	171 000	294 000	265 200
Travel	25 000	15 850	12 850	18 500	9 000	9 000	9 000	9 000	15 000	10 400
Equipment	0	0	0	8 700	0	0	55 000	0	0	0
Other goods and serv.	17 000	10 000	0	5 000	0	0	5 000	5 000	5 000	65 000
Subcontracting	0	0	0	0	0	0	0	0	0	0
Indirect costs	93 000	51 963	33 213	144 300	48 500	53 250	67 570	158 750	78 500	80 050
Total eligible cost	465 000	259 813	166 063	821 500	242 500	266 250	337 850	793 750	392 500	425 750
Req.EU Contribution	465 000	259 813	166 063	575 050	169 750	186 375	236 495	555 625	274 750	298 025

	21 ESP	22 PRA	23 TUE	24 UAV	25 STU	26 LTU	27 ARU	29 HON	29 UNB
Personnel	59 462	25 500	482 770	333 720	390 656	247 500	250 000	350 000	35 250
Travel	9 000	9 000	35 000	26 000	30 000	15 000	15 000	15 000	20 500
Equipment	0	0	0	19 200	0	0	0	0	0
Other goods and serv.	0	0	7 800	9 000	6 000	6 000	0	0	1 000
Subcontracting	0	0	20 500	0	0	10 000	0	0	0
Indirect costs	17 116	8 625	131 393	96 980	106 664	67 125	66 250	91 250	14 188

Total eligible cost	85 578	43 125	677 463	484 900	533 320	345 625	0	0	70 938
Req.EU Contribution	59 904	30 188	677 463	484 900	533 320	345 625	0	0	49 656

Table 3.4b: 'Other direct cost' items (travel, equipment, other goods and services, large research infrastructure)

1 VTT	Cost (€)	Justification
		Teknologian tutkimuskeskus VTT Oy
Travel	25 000 €	Travels to project meetings 10 150 €, Travels to project dissemination meetings 10 150 € WP6 Visiting ULLs (1200€), followers workshops + interviews (3500€)
Other	43 000 €	Travel cost of advisory board members from Europe, Latin America and China (4 meetings, 7 AB members) 32 000 € Mandatory audit (CFS) at the end of the project 5000€ 1 Project meetings organisation 5 000€ Granting Gold Open Access for publications in journals 1000 €
Total	68 000 €	
2 FHG	Cost (€)	Fraunhofer Gesellsaft zur Forderung der Angewandten Forschung EV
Travel	25 000 €	WP leadership, Attending joint meetings in T6.5 (in conjunction with general meetings in frontrunner cities), project and consortium meetings 12 650 € Visiting ULL's in T6.5, 2100 €, Visiting follower cities for on-site stake holder WS / conducting interviews 3750 €, On-site assessment in the follower cities 5000 € Task leader meetings @ one of the task leaders 2400€
Other	20 500 €	Granting Gold Open Access for publications in journals 1000 € Mandatory audit (CFS) at the end of the project 5000€ Budget for international follower cities (Buenos Aires, Hong Kong, Guangzhou, Brazilian network of cities) 14 500€
Total	45 500€	
3 EIN	Cost (€)	GEMEENTE EINDHOVEN
Travel	25 000 €	Travel costs for district meetings, and linked third parties for participation project meetings, dissemination and events, CommunityViz (or equivalent) training at UAVR
NBS	900,000€	Action 1 – Increasing resilient green areas within the city addressing in particular,1) the issue of underground infrastructure as a limiting factor for greening city centre.2) In addition making a description of "climate-proof building" and investigate the possibilities to oblige to build climate-proof. 3)Assessment of typology of green related to the specific use of the urban area. Introducing the potential of "flexible green" adapted to occasional use of the public space (concerts, festivals) together with (e.g.) the Design Academy. Areas: Victoria Park; Clausplein; Fietsenstalling Centre; 18 Septemberplein; H. Broeckstraat; Dommelstraat; Waagstraat, Rode Loper, Bilderdijklaan, Stationsweg, Deprec. (Total cost € 1,050,000, EU req. 50 000€ Duration 4 yr, use in the project 4 yr, D.ratio 100%), Action 2 – Green roofs and green facades, Areas: Witte Dame; Gevel V&D; Seepaerdstate • Innovative biobased sensors integrated in the structure • Deprec. (Tot cost €500,000, EU req. 100 000€ Duration 4 y, use in the project 4 y, D.ratio 100%) Action 3 – daylighting of watercourses Areas: Victoria Park; Stationsweg • Incl. Action 1. The action will take place in two of the areas also covered under Action 1. The innovation is the fact that the actions will be carried out as part of an integrated action linking green and blue measures, together with a process of citizens participation • Deprec. (Tot cost €450,000, EU req. 200 000€ Duration 4 yr, use in the project 4 yr, D.ratio 100%) Action 4 – Preparation of water stockage areas Areas: Victoria Park; Stationsweg: • Inc. in the costs in Action 1. The action will take place in two of the areas also covered under Action 1. Selecting and implementing simple nature based techniques to clean the water. The innovation is the fact that the actions will be carried out as part of an integrated action linking green and blue measures, together with a process of citizens participation • Deprec. (Tot cost €500,000, EU req. 150 000€Duration 4 yr, use in the project 4 yr, D.ratio 100%) Action 5 – Heat stress measures Areas: Victoria Park; Clausplein; Witte Dame; 18 Septemberplein; H. Boexstraat; Dommelstraat; Waagstraat, Bilderdijklaan • Incl. in Action 1&2. The action will take place in two of the areas also covered under Action 1&2. The innovation is the fact that the actions will be carried out as part of an integrated action

		linking green and blue measures, together with a process of citizens participation, Using website to exchange knowledge and experiences between stakeholders/citizens "040goedbezig" • Deprec. (Tot cost €550,000, EU req. 200 000€, Duration 4 yr, use in the project 4 yr, D.ratio 100%) Action 6 – Biodiversity measures Areas: Mathildelaan, Clausplein, Dommelstraat, Waagstraat, H.Boexstraat, Stationsweg, Victoriapark, Rode loper, Bilderdijklaan • Incl. in Action 1. The action will take place in two of the areas also covered under Action 1. The innovation is the fact that the actions will be carried out as part of an integrated action linking green and blue measures, together with a process of citizens participation. • i-tree research project to measure the contributes of different types of trees towards air pollution, water use, adsorption of CO2 energy etc. This will result in, depending on needs, choice of type of green and density • Geo triggered survey to collect ideas about the usage and design of public space (development of system geo triggered survey is done by a separate partner) • Deprec. (Tot cost €550,000, EU req. 200 000€, Duration 4 yr, use in the project 4 yr, D.ratio 100%) All NBS actions €3,800,000 total cost (€900,000 from EC - €2,300,000 own funds) In addition € 2,900,000 non NBS own funds)
Equip	8 700 €	WP3 + WP4:1 Touch Tables / Smart Board / Interactive Whiteboard:€ 5,000, 1 CommunityViz software (or equivalent)€ 1,000, 3 yrs CommunityViz licence (or equivalent)€ 2,700
Other	20 000 €	Mandatory audit (CFS) at the end of the project 5000€ 3 Project meetings organisation 15 000€
Total	953 700€	
4 GEN	Cost (€)	COMUNE DI GENOVA
Travel	25.000 €	Travel costs for district meetings, and linked third parties for participation project meetings, dissemination and events, CommunityViz (or equivalent) training at UAVR
NBS	900 000 €	Action 1 Demolition of 46.000 m3 of existing buildings, to unseal surfaces and guarantee future adequate drainage and fertile soil. Soil characterization plan to determine any pollution abatement • Budget: 830 000 €, no EU funding requested Action 2 Draining features in the 1)framework of a new recreational public space (draining hardscape surfaces layouted through paved landscape terraces, green patches, trees, playgrounds), 2)Create ponds and wetlands to collect, store and clean water before gradual release into water courses 3)Use permeable surfaces in hard landscape construction to provide aquifer recharge.Eligible budg 350 000 € Action 3 Collective gardens , productive green open space involving inhabitants by including urban farming and rest areas, in order to increase people awareness of flood risk and limit the potential damage of flooding, Eligible budget: 300 000 € Action 4 Rain gardens, 1) Allow runoff from impervious urban areas to be absorbed 2) Use of balancing ponds to contain surges and release water slowly 3) Increase co-creative and citizen activate biodiverse tree planting in urban locations. Eligible budget: 250 000 € The city invests already 46.724.074,03 € Furthermore Genova has been identified as a priority intervention by the government project Italia Sicura, focused on reducing the hydro-geological risk by allocating EUR 300 mio on safety of high-risk flood streams interventions.
Equip	8700 €	WP3 + WP4:1 Touch Tables / Smart Board / Interactive Whiteboard:€ 5,000, 1 CommunityViz software (or equivalent)€ 1,000, 3 yrs CommunityViz licence (or equivalent)€ 2,700
Other	20 000 €	Mandatory audit (CFS) at the end of the project 5000€ 3 Project meetings organisation 15 000€
Total	953 700€	
5 TRE	Cost (€)	TAMPEREEN KAUPUNKI
Travel	25.000 €	Travel costs for district meetings, and linked third parties for participation project meetings, dissemination and events, CommunityViz (or equivalent) training at UAVR
NBS	450 000€	Action 1 Rain gardens and Nature based water management solutions of 60.000 m2 for Tervaslammenpuisto garden, nature inspired and communicating water solutions, early warning and preventing solutions for water management • Eligible budget: 95 000 € (total budget 355 000 € and 1 000 000 € for the ground preparation and routes, in addition the investment for Vuores 245 000 000 €) Action 2 Biofilters for Virolaistenpuisto garden, new innovative biofilters based on natural / nature mimicking material

		• Eligible budget: 100 000 € (total budget 300 000 € and 610 000 € for the ground preparation and routes) Action 3 Algies demonstration for Hiedanranta, new type of algies for water purification in old industrial area to enhance the natural purification process of lake water • Eligible budget 50 000 € (total budg 100 000 € and Hiedanranta development 300 000 000 €) Action 4 Innovation vouchers for housing co-operatives, citizens encouragement for urban green and blue solutions in the city and pirvat land intersection allowing holistic NBS use • Eligible budget: EU funding 30 000 € (total budget 40 000€) Action 5 Artic green roofs and walls (special spices suitable for heavy sub-arctic climate with changing freezing-melting cycle and slow load, also suitable for tilted roofs with slow load) • Eligible budget: EU funding 100 000 € (total eligible budget 200 000€) Action 6 Central park water management and flooding system NBS solutions, new smart solutions for resilient system in existing urban structure, focus in early warning indicators and back up systems • Eligible budget: EU funding 75 000 € (total eligible budget 200 000€) Existing investments for the area already 100 0000 000 €
Equip	8 700 €	WP3 + WP4:1 Touch Tables / Smart Board / Interactive Whiteboard:€ 5,000, 1 CommunityViz software (or equivalent)€ 1,000, 3 yrs CommunityViz licence (or equivalent)€ 2,700
Other	20 000 €	Mandatory audit (CFS) at the end of the project 5000€ 3 Project meetings organisation 15 000€
Total	503 700€	In addition the total investments from city 646 610 000 €
6 STA	Cost (€)	STAVANGER COMMUNE
Travel	9 000 €	Travel to 8 project meetings and dissemination
Total	9 000 €	
7 CAS	Cost (€)	AYUNTAMIENTO DE CASTELLON DE LA PLANA
Travel	9 000 €	Travel to 8 project meetings and dissemination
Total	9 000 €	
8 CAN	Cost (€)	MAIRIE DE CANNES
Travel	9 000 €	Travel to 8 project meetings and dissemination
Total	9 000 €	
9 IPR	Cost (€)	INSTITUT PLANOVANI A ROZVOJE HLAVNIHO MESTA PRAHY
Travel	9 000 €	Travel to 8 project meetings and dissemination
Total	9 000 €	
10 BAS	Cost (€)	T.C. BAŞAKŞEHIR BELEDIYESI
Travel	9 000 €	Travel to 8 project meetings and dissemination
Total	9 000 €	
11 ENoLL	Cost (€)	EUROPEAN NETWORK OF LIVING LABS
Travel	25 000 €	Travel to 8 project meetings and dissemination and WP leader and living labs organisation meetings
Other	17 000 €	Mandatory audit (CFS) at the end of the project 5000€ Organising 6 works shops and material 12 000 €
Total	42 000€	
12 ERRIN	Cost (€)	EUROPEAN REGIONS RESEARCH AND INNOVATION NETWORK
Travel	15 850 €	Travel to project meetings and dissemination, task leader, WP leader
Other	10 000 €	Leaflets, posters, Dissemination events 10 000 €
Total	25 850 €	
13 LAN	Cost (€)	LAND MILANO
Travel	12 850 €	Travel to 8 project meetings and dissemination, project meetings, Genova meetings
Total	12 850 €	
14 ENG	Cost (€)	ENGINEERING – INGEGNERIA INFORMATICA SPA
Travel	18 500 €	Travel to 8 project meetings and dissemination, WP leadership, Task meetings, CommunityViz (or equivalent) training at UAVR
Equip	8 700 €	WP3 + WP4:1 Touch Tables / Smart Board / Interactive Whiteboard: € 5,000, 1 CommunityViz software (or equivalent): € 1,000, 3 yrs CommunityViz licence (or equivalent): € 2,700
Other	5 000 €	Mandatory audit (CFS) at the end of the project 5000€
Total	32 200€	

15 M3S	Cost (€)	M3S SRL
Travel	9 000 €	Travel to 8 project meetings and dissemination
Total	9 000 €	
16 RAM	Cost (€)	RAMBOLL MANAGEMENT CONSULTING
Travel	9 000 €	Travel to 8 project meetings and dissemination
Total	9 000 €	
17 INN	Cost (€)	INNOHUB BV
Travel	9 000 €	Travel to 8 project meetings and dissemination
Equip.	55 000 €	INN offers to the project a complete middleware software stack which includes a hosting service. Within project this hosting is foreseen on premise, within the City of Eindhoven. The project will develop a multi-use platform which will allow for the storage, presentation and analysis of date emanating from the project, but will also be flexible enough to be expanded with further data sets as required. The platform will be able to communicate with similar platforms in the other front runner cities, among others for comparative purposes. The following hardware infrastructure is foreseen: Rackservers for Control Center services (€10,000), Multi-touch outdoor panels for 3-5 locations within Eindhoven. These panels will also enable connectivity of foreseen sensors and interaction with visitors (€40,000), iPad pro tablets for area managers (€5,000)
Other	5 000 €	Mandatory audit (CFS) at the end of the project 5000€
Total	69 000€	
18 IMP	Cost (€)	P.G.KUIJPERS & ZONEN B.V.
Travel	9 000 €	Travel to 8 project meetings and dissemination
Other	5 000 €	Mandatory audit (CFS) at the end of the project 5000€
Equip.	800 000 €	IMP is engaged in the investments in a number of the demo areas in the city of Eindhoven with a total cost of €2,100,000 of which €800,000 is requested as support from the EC. In particular it concerns: 1) The innovative new greening of urban areas (new spieces and mixtures) in: Clausplein; Fietsenstalling Centre; 18 Septemberplein; H. Broeckstraat; Dommelstraat; Waagstraat, Rode Loper, Bilderdijklaan (250 000€) 2) The daylighting of watercourses and creation of water stockage areas in: Stationsweg 250 000€ 3) The taking of specific heatstress measures in: Clausplein; 18 Septemberplein; H. Boexstraat; Dommelstraat; Waagstraat, Bilderdijklaan 4) The taking of bio diversity measures in: Clausplein; Dommelstraat; Waagstraat; H.Boexstraat, ;Stationsweg; Rode loper; Bilderdijklaan, 300 000€ Many of the areas involve different types of measures that will be carried out in an integrated manner and will impact on different themes (eg, green roofs impact on water household, but also on heatstress and indoor building cimate as well as bio diversity).
Total	814 000€	
19 DAPP	Cost (€)	D'APPOLONIA SPA
Travel	15 000 €	Travel to 8 project meetings and dissemination, exploitation manager and meetings with industry and exploitation partners
Other	5 000 €	Mandatory audit (CFS) at the end of the project 5000€
Total	20 000€	
20 IRE	Cost (€)	INFRASTRUTTURE RECUPERO ENERGIA AGENZIA REGIONALE LIGURE – I.R.E. S.P.A.
Travel	10.400€	Travel costs for 8 project meetings, technical meetings, dissemination and events
Other	60.000€	Topography services (WP5) 16.000 €, Archaeology services (WP5) 5.000 €, Geology services (WP5), 15.000 €, Drilling services (WP5) 12.000 €, Electricity services (WP5) 12.000 €
Other	5 000 €	Mandatory audit (CFS) at the end of the project 5000€
Total	75.400	
21 ESP	Cost (€)	PARC CIENTIFIC TECNOLOGIC I EMPRESARIAL DE LA UNIVERSITAT JAUME I, S.L.
Travel	9 000 €	Travel to 8 project meetings and dissemination
Total	9 000€	
22 PRA	Cost (€)	HLAVNÍ MĚSTO PRAHA
Travel	9 000 €	Travel to 8 project meetings and dissemination
Total	9 000 €	
23 TUE	Cost (€)	TECHNISCHE UNIVERSITEIT EINDHOVEN
Travel	35 000€	Travel to general meetings, 3 persons traveling to 5 follower cities for 3 rounds extensive workshops

		with large groups of stakeholders, 1 person traveling for Future Telling and Roadmapping interviews with thought leaders in the EU (5 trips for 18 interviews), 3 persons traveling to 2 front-runner cities for 2 rounds of workshops with follower cities.
Other	7 800 €	Mandatory audit (CFS) at the end of the project 5000€ Granting Gold Open Access for publications in journals 1000 € Printing costs WS material+posters future scenario and roadmaps for the follower cities. 1 800 €
Total	42 800€	
24 UAV	Cost (€)	UNIVERSIDADE DE AVEIRO
Travel	26 000 €	Travel costs for district meetings, and linked third parties for participation project meetings, dissemination and events, WP1:Project meetings (4 meetings * 2 persons * €1,000/meeting), WP3:Stakeholder meetings (3 meetings/yr * 3 yrs * €1,000/meeting), WP3/WP7:International assemblies/conferences (2 conferences/yr * 3 yrs * €1,500/conference)
Equip	19 200€	WP3 + WP4:1 Touch Tables / Smart Board / Interactive Whiteboard: € 5,000, 4 High-speed processing computers (desktop/laptop): € 4,500, 1 CommunityViz software (or equivalent): € 1,000, 3 yrs CommunityViz licence (or equivalent): € 2,700,1 XP-SWMM software (or equivalent): € 5,000,3 yrs XP-SWMM license (or equivalent): € 1,000
Other	9 000 €	Mandatory audit (CFS) at the end of the project 5000€ Granting Gold Open Access for publications in journals 1000 € CommunityViz (or equivalent) training at UAVR (WP4) for Front runner cities 3000 €
Total	54 200€	
25 STU	Cost (€)	UNIVERSITAET STUTTGART
Travel	30 000€	the System analysis (that requires a 5-day trip to each follower city) and also with the production of the Handbook (which requires travels to frontrunner cities). Exploitation workshops (to take place in conjunction with GA meetings)– 5 times, incl. accomodation for 1 night (one person): (300+150)*5=2250 NBS Handbook - a 3-day trip to every frontrunner city in the 1st year of the project (1 person) and also in the 4th year of the project for the revised Handbook (WP3 Monitoring): (3*3*150+300*3)*2=5400 System Analysis (WP6) - a 5-day trip to every follower city including Buenos Aires (since now they are also receiving a roadmap) for a group or 3 researchers: (5*3*150+3*300)*5+(3*5*150+3*1000)=21000 Roadmapping training (WP6) – a 1-day trip incl. accomodation for 1 night (one person): 150+300 = 450 Coaching on NBS Handbook - 1 3-day trip to the roadmapping and portfolio development workshops in each follower city to ensure (WP6): 5*(3*150+300)+(3*150+1000)=5200 Trips to the joint roadmapping workshops – 2 1-day trips including accomodation for 1 night (1 per): 2*(150+300) = 900 Dissemination (WP7) 6 trips within Europe incl. accomodation for 1 night (1 per): (300+150)*6=2600
Other	6 000 €	Mandatory audit (CFS) at the end of the project 5000€ Granting Gold Open Access for publications in journals 1000 €
Total	36 000€	
26 LTU	Cost (€)	LULEÅ TEKNISKA UNIVERSITET
Travel	15 000€	Travel to 8 project meetings and dissemination, and workshop meetings with cities (20 trips abroad)
Other	6 000 €	Mandatory audit (CFS) at the end of the project 5000€ Granting Gold Open Access for publications in journals 1000 €
Total	31 000€	
27 ARU	Cost (€)	OVE ARUP & PARTNERS HONG KONG LTD
		Own funding
28 HON	Cost (€)	HONG KONG POLYTECHNIC UNIVERSITY
		Chinese matching funding
29 UBA	Cost (€)	UBATEC SA
Travel	20 500€	Travel to project meetings and dissemination
Other	1 000 €	Granting Gold Open Access for publications in journals 1000 €
Total	21 500€	

4. MEMBERS OF THE CONSORTIUM

4.1. Participants (applicants)

PARTNER N. 1: VTT - TEKNOLOGIAN TUTKIMUSKESKUS VTT, FINLAND

(VTT Technical Research Centre of Finland)

DESCRIPTION OF THE ORGANIZATION

VTT Technical Research Centre of Finland Ltd is a state owned and controlled non-profit limited liability company. As an impartial non-profit Research and Technology Organisation (RTO), VTT carries out research and innovation activities for the needs of industry and knowledge-based society. In 2014, VTT's turnover was 277 million €, with 2600 highly educated employees. VTT has vast experience working as a partner in and as a coordinator of a diverse range of EU projects. In 2015 alone, VTT was involved in 355 EU-funded research projects. VTT's activities in the Smart Cities domain are characterised by genuine trans-disciplinary and cross-sectoral approaches with strong expertise in areas including sustainable urban development, clean technologies, bio-economy, ICT, transport and energy.

VTT is an active member of EERA, European Energy Research Alliance. In addition VTT has a representative within EIP SCC in the high level group and in the Sherpa group. VTT is currently developing a roadmap for Smart Cities within CIB and contributing to the UN New Urban Agenda. Nationally, VTT has been a representative on the Climate change panel, which advises the Finnish Parliament regarding sustainable cities, energy, and transport systems. In addition, VTT supports Finnish legislation in urban planning, energy certificates, biofuels, and the definition of building codes, among other areas.

VTT is coordinating the UNaLab consortium and will deliver technical activities by supporting front-runner cities and providing technical expertise in nature-based solutions in WP5. In addition, VTT is strongly engaged in WP3 and WP4 in devising monitoring frameworks and ICT platforms for monitoring of NBS performance.

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Prof Miimu Airaksinen: Experience in several national and international RTD projects in the domain of Smart cities, Energy efficiency in buildings and communities, HVAC, indoor air quality and smart cities solutions. Active in international co-operation and projects: E2BA, ECT and EERA Smart Cities, CIB smart cities, EIP SCC, UN Habitat Policy adviser in Policy Unit 9 on urban services and technologies including smart cities. She coordinates the H2020 project CITYkeys focusing on smart city performance monitoring.	Female
Principal investigator Mona Arnold: Experience in environmental technologies and innovation systems. She coordinates and promotes water and waste related research in VTT and acts as project manager in national and international projects and programs in the area of water and waste. She is a member of EIP Water Steering Group, MC member of the Cost 2020 water group and vice MC in EUBIS Cost on Utilisation of organic sidestreams.	Female
Principal Scientist Erika Holt: Extensive experience in infrastructure materials for Smart Cities and Smart Water, including recycling, stormwater purification, materials durability. Member of RILEM, ACI, ECTP for materials development. Coordinator of VTT projects CLASS and STORMFILTER.	Female
Senior research scientist Kalevi Piira, M.Sc (Eng). Research and industrial activities: building and smart city ICT systems, ICT based building and district management technologies, building and city level safety & security systems (fire & flood), software engineering, cloud based simulation and fault detection engines and related data analytics, visualisation, building automation and smart grid protocols and standards, application of new enabling technologies to buildings and cities. Recent participating in EU projects EEPOS and CITYkeys. Participating in national projects DIEM (Devices and Interoperability Ecosystems), PARK (Rescue vehicle reporting system) and SmartAlarm (Urban Flood Alarm System for Real Estates).	Male
Senior Scientist Laura Wendling: Researcher focused on the development and evaluation of innovative technologies for smart industry and energy systems, including sustainable and smart cities. 12 years'	Female

experience as principal or co-investigator on numerous international R&D projects. More than 100 scientific publications. Trusted advisor to international government agencies with respect to environmental biogeochemistry, wastewater treatment and re-use, and environmental risk evaluation (e.g. Standards Australia, Western Australian EPA, Swan River Trust, Jiangxi Province Department of Water Resources).	

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

- Airaksinen M., Ahvenniemi H., Virtanen M., 2012, Smart City Key Performance Indicators, European Energy Research Alliance, EERA, Join Program Energy in Cities status Report.
- Arnold, M., Bredimas, R., Cao, M., (2015) Integrative aspects in smart cities – water, waste, transport, energy and ICT. Presentation at the 13th Computing Control for the Water Industry Conference. De Montfort University, Leicester, UK 2nd – 4th September 2015.
- Wendling L, Blomberg, P, Sarlin, T., Priha, O., Arnold, M., 2013. Phosphorus sorption and recovery using mineral-based materials: Sorption mechanisms and potential phytoavailability. Applied Geochemistry Vol. 37 157–169.
- Niemeläinen, E.; Loimula, K.; Kuosa, H., 2015. Effects of pervious surfacing materials and subbase structures on stormwater ground infiltration. Geotechnical Engineering for Infrastructure and Development - Proceedings of the XVI European Conference on Soil Mechanics and Geotechnical Engineering, ECSMGE 2015. ICE Publishing. Vol. 2 (2015), pp. 331-336.
- Kuosa, H., Holt, E., 2014. Development of durable pervious concrete for Finland's Stormwater Management Needs. Proceedings of Concrete Innovation Conference, Oslo, June 11-13, 11 p.

RELEVANT PREVIOUS PROJECTS.

- H2020 EU project CITYkeys – Smart city performance measurement system. Development and testing of smart city performance (www.citykeys-project.eu), Coordinated by VTT.
- BlueSCities: Blueprints for Smart Cities: Developing the methodology for a coordinated approach to the integration of the water and waste sectors within the EIP Smart Cities and Communities 2015- Horizon 2020 project.
- R3 Water: Reuse of water, Recovery of valuables and Resource efficiency in urban wastewater treatment. FP7 Inno Demo project 2014-2017.
- CLASS: Climate Adaptive Surfaces. TEKES project, total budget 667 k€. 2012-14. 15 industrial partners. http://www.vtt.fi/sites/class
- STORMFILTER: Engineered Infiltration Systems for Urban Stormwater Quality and Quantity, 2015-17. TEKES funding, total budget 850 k€. 17 industrial partners, 3 research partners. http://www.vtt.fi/sites/stormfilter

PARTNER N. 2: FRAUNHOFER IAO, GERMANY

DESCRIPTION OF THE ORGANIZATION

The Fraunhofer-Society is Europe's largest organization for applied research. Our research efforts are geared entirely to people's needs: health, security, communication, energy and the environment. With 85 research institutes around the world mainly focusing on engineering sciences and natural sciences, the Fraunhofer-Society works very closely with industry and cities, developing the technologies for a sustainable future.

The Fraunhofer Institute for Industrial Engineering (IAO), located in Stuttgart, focuses on technology management and systemic integration of business models, technologies, people's behaviour and regulatory frameworks. The activities of the Fraunhofer IAO focus on investigation of current topics in the field of technology management. A holistic approach is applied to the study of

commercial success, employees' interests and social consequences. The Institute helps organizations identify the technologies of relevance to them, and draws up a technology strategy aligned to the competitive environment and the market.

Fraunhofer IAO has been leading the Fraunhofer »Morgenstadt / City of the Future« Initiative since 2011 and coordinates 10 Fraunhofer Institutes in developing a radical new methodology for conducting urban systems research by forming transdisciplinary teams. Fraunhofer IAO has been working in several city-related EU projects like TIDE, PROSESC or CIVITAS. In addition, we have a coordinating role in projects like PRESOURCE, DESTRIERO, VERITAS or CRISMA.

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

M.Sc. Alanus von Radecki is the Head of the team „Urban Governance Innovation "and Project Leader of the Fraunhofer Innovation Network »Morgenstadt: City Insights« at Fraunhofer IAO. He coordinates the collaboration of 21 companies, 10 Fraunhofer-Institutes and 12 cities on innovation projects for sustainable urban development. Besides conducting research on urban governance and transformation management in complex socio-technical systems, he is currently enrolled as Doctoral candidate in technology management & urban governance at Stuttgart University. Mr. von Radecki graduated as M.Sc. Environmental Government from Freiburg University in 2011. Since then he has worked with the Fraunhofer IAO, mainly in research & development projects on sustainable development of cities and infrastructure.	Male
M.Sc. Damian Wagner is currently a Senior Project Manager for smart cities at Fraunhofer IAO. He also coordinates the smart city flagship project Triangulum, which is a European Smart Cities and Communities project. Prior to joining Fraunhofer IAO, Damian worked as senior project manager in the innovation management of a leading German utility company and with the International Emissions Trading Association (IETA) in Brussels. His focus is on sustainable energy, hydropower and (new) markets. Mr. Wagner holds a MSc in Energy Policy & Sustainability (with distinction) from the University of Exeter and a Bachelor of International Management from ESB Business School Reutlingen and ESCI in Barcelona	Male

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

- W. Bauer, A. v. Radecki, N. Fanderl, W. Engelbach et al.; Industry-oriented Joint Research Project "Morgenstadt: City Insights", Final report Phase I (2012-2013), November 2013
- D. Kalisch, S. Schatzinger, S. Braun, A. v. Radecki; Morgenstadt: City Insights - A research approach for systems research in urban development, RealCORP, June 2013
- S. Braun; Trendreport "Ideen finden Stadt – Outlooks on German Urban Future", 2014

RELEVANT PREVIOUS PROJECTS.

- Morgenstadt: City Insights - Joint Research Project with thirty partners from industry, cities and research for the development of new strategies for urban sustainable innovation. www.morgenstadt.de/en
- Urban Tech Republic @TXL – Industry project for the State of Berlin for the concept development of an urban technology testbed for experimentation and demonstration areas on the former Berlin Tegel airport.
- Triangulum - SCC-1-2014 Project, smart and efficient transformation of 3 lighthouse city districts (Manchester, Stavanger, Eindhoven), development of a joint ICT reference architecture and a smart city framework for replication to follower cities and beyond.

PARTNER N. 3: CITY OF EINDHOVEN, THE NETHERLANDS

DESCRIPTION OF THE ORGANIZATION

The City of Eindhoven is one of the five largest cities in The Netherlands with 230,000 inhabitants, while Eindhoven region has more than 750,000 inhabitants. The city is one of the three economic engines of The Netherlands, delivering 14% of the

national GDP. With its Brainport 2020 Strategy, developed jointly by knowledge, business and public partners within the city and region, Eindhoven has determined its strategic objectives for city and region for the coming decade.

Through its "Climate policy Plan", Eindhoven sets its ambitions in the field of climate change and sustainability. The city is ambitious, aiming to create a green and pleasant to live in city, focusing on achieving a "Complex and Complete" city, with high quality experience of the urban working and living climate by the citizens, companies and tourists. Eindhoven is determined to create a sustainable green structure providing significant value for the quality of life. On the other hand, the city administration set clear goals in terms of water management aimed at bringing back "blue spaces" in the urban fabric. In recent years, due to rapid urbanization, significant blue zones disappeared from view, with significant detrimental consequences to the urban environment and quality of life. There are several small rivers crossing the city, such as the Dommel, the Gender, the Grote Beek and the Tongelreep which will be opened up once again. Eindhoven cooperates with the regional water board in order to restore these water flows and to improve the water system aiming for a robust, climate resilient and clean water system, not only for the city, but also for the region. The Climate policy plan is backed up by the Sustainable Energy Action Plan (SEAP) as developed in the context of the Covenant of Mayors and by the Roadmap "Green and Water" which is currently under development within the EU project "Roadmaps for Energy" (R4E), co-financed by the H2020 programme.

As to stakeholders and citizens' awareness, participation and engagement – these are vital elements in the public policy of the city. They have become more acute in recent years as the city administration has been forced to deliver more efficient services to citizens with often less financial and human resources. This has forced the city to look more closely at the means to engage the citizens and has opened Eindhoven up more than before to other actors if they wish to get engaged. Innovative engagement processes such as co-creation and the Natural Step approach, engaging stakeholders in municipal policy making and implementation in areas around sustainability have found a foothold in Eindhoven. This quadruple helix approach (the city administration, private sector, knowledge institutes and the citizens) determines our approach from today into the future.

The city of Eindhoven will act as one of the three front runner cities in the UNAlab project and its role will be to demonstrate BS in a real urban context. Eindhoven has ample experience with such demonstrations both as one of the first Smart City Lighthouse cities and through the local Living lab approach which Eindhoven adopted several years ago in order to improve the quality of life while stimulating social and technological innovation.

CVs OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Frank van Swol is head of the department for spatial management and planning and is responsible for the coordination and initiation of projects in the field of public space. He is very strong in raising political awareness on crucial issues such as climate adaptation and the impact on cities and knows how to link international partners to learn from each other and bring a project to the next level. He is actively involved in the Eurocities network and has been involved in several EU supported projects. For the EU INTERREG IVC project Aqua-add ("Deploying the added value of water in local and regional development"), he was the project manager.	Male
Luuk Postmes is an experienced senior policy adviser on environmental issues, focusing on green, water and urban spaces aspects within the municipality of Eindhoven. He has been actively involved in developing the local climate sustainability plans in the recent years, acting as a linking pin among different stakeholders in the city. In the last years he participated as an expert in the EU INTERREG IVC project Aqua-add ("Deploying the added value of water in local and regional development"), while currently Luuk is our expert on the theme "smart urban spaces" within the H2020 financed project "Roadmaps for Energy".	Male
Karel Beljaars ecologist, experience on ecological research in aquatic (western Europe) and terrestric (Netherlands) systems. For several years working on improvement of ecosystems and biodiversity in, and around the city of Eindhoven. I want contribute to development of the combination off human settlement with sustainable biodiversity and ecosystems.	Male
Ingeborg Schouten is an experienced policy advisor, focusing on green spaces, trees, recreation and environmental assignments. She wants to reinforce the city of Eindhoven as a happy, healthy and climate adaptive city. Along the years she gained experience in working with different stakeholders (public and private) in the Eindhoven region. Formerly she participated in the EU INTERRED IVC project Aqua-add.	Female
Anthony van de Ven is the Head of Office in the Eindhoven Brainport EU office and in this capacity has responsibility for, among others, the European project activities, the city of Eindhoven and other partners in the Eindhoven region engage in. He has over 20 years of experience in project acquisition and project management in a wide variety of European funding programmes, ranging from the various Structural Funds programmes to Framework and CIP programmes. Along the years he gained valuable experience in working on projects across EU borders, an essential skill for those engaged in EU projects. Due to his position, and the fact that he works on water and climate issues with both the public sector as well as with business partners in	Male

the region and the knowledge organizations (TU/e and KIC INNO-ENERGY) he is able to grasp quickly the various environmental aspects facing local authorities, and share these effectively among different EU partners.	

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

- Vision and roadmap urban lighting Eindhoven 2030: A vision and roadmap for sustainable urban lighting and to become energy neutral in the built environment in a participative approach involving the triple helix; http://www.tue-lighthouse.nl/RoadmapEhv2030EN.html and http://www.eindhoven.nl/inwonersplein/leefomgeving/slim-licht/smart-light.htm
- The Roadmap Energy: Eindhoven's Vision and Roadmap 'Eindhoven Energyneutral 2045' describes the challenge Eindhoven faces in its ambition towards its goals in the field of sustainable energy and climate-protection. It's a description of the goals, the playing field, the stakeholders and the expected developments and innovations in various aspects of each. On the basis of the roadmap and of the recently adjusted ambitions in CO2-emisssion reduction at the moment a new, quantified climate-action plan is being prepared. This will be available by the end of 2016.
- The Roadmap Green and Water (under development): In the roadmap the most important subject for the future city is the liveability of the city. Second most important subject is safety, mostly related to water, but also to the heat stress. Both subjects relate to the UNaLab project and will be improved accordingly to the roadmap scenario by adding green and blue spaces both in private as well as public space.

RELEVANT PREVIOUS PROJECTS.

- TRIANGULUM: TRIANGULUM is a project funded under the Horizon 2020 programme – the Smart Cities Lighthouse Call. The Triangulum project (2015-2020) will demonstrate how a systems innovation approach based around the European Commission's SCC Strategic Implementation Plan can drive dynamic smart city development. We will test the SIP across three lighthouse cities: Manchester, Eindhoven and Stavanger, which represent the main typologies of European cities. They will be complemented by the follower cities Prague, Leipzig and Sabadell. The suite of projects developed will be based around zero/low energy districts, integrated infrastructures and sustainable urban mobility designed to deliver a range of cross-cutting outcomes across different sectors and stakeholders. http://triangulum-project.eu/
- Roadmaps for Energy (R4E): Within the R4E project the partners will work together to develop a new type of energy strategy through visions and roadmaps for the 8 partner cities, in co-creation with local stakeholders. The stakeholders include the benefactors of the strategy, such as citizens, as well as relevant research and industry partners, to offer a clear picture of the future potential of the city. Each partner city has chosen two focus areas within Smart Energy Savings: 1. Smart Buildings, 2. Smart Mobility or 3. Smart Urban Spaces. In the R4E project a four step process is applied: 1. Ambition setting; 2. Visioning, to develop desired scenarios for the cities for the selected focus areas; 3. Development of the Roadmaps; 4. Generation of a Project portfolio with new projects and initiatives to reach the ambitions, visions and roadmaps of the cities. R4E has been funded under the Horizon 2020 EE7 Call for proposals, starting in 2015 with a duration of 3 years. http://roadmapsforenergy.eu/
- Smart Procurement European Alliance (SPEA): The SPEA project (CIP-funded project – Aug 2012-Aug 2016) promotes the procurement of innovative solutions from inside the public entities. The main aim of SPEA is to implement a public procurement of innovative solutions in the area of energy efficiency in municipal buildings in the partner cities: Barcelona, Eindhoven and Birmingham. And increasing, thereby the demand for innovation in this field and enhancing innovation of public services in relation to the improvement in quality/efficiency of them, providing opportunities to SMEs to get involved in public procurement as direct beneficiary/client of a purchasing authority. Website: http://www.speaproject.eu/;
- Public lighting strategies for urban spaces (PLUS) was a project implemented between 2010 and 2012 by several cities in Europe, under the lead of the City of Eindhoven and it was financed under the INTERREG IVC programme. The EU has set important targets on the reduction of CO2 emissions. The high number of emissions is largely because of massive energy use. Lighting public space accounts for some 60% of public energy use in an average EU city. Any reduction in energy consumption that can be achieved due to the application of innovative technologies or different

approaches to public lighting will have a significant impact on total energy use and, therefore, on CO2 emissions. Within this consortium, the partners learned from each other how to develop lighting policies and strategies in order to implement energy efficient lighting solutions. Website: http://www.luciassociation.org

- Deploying the added value of water in local and regional development (Aqua_add) was a project implemented between 2012 and 2014, financed under INTERREG IVC and led by the city of Eindhoven with 11 partners from different European countries. It has become evident in the last years that European regions and cities have been facing important challenges related to water: water storage and discharge after (heavy) rainfall, water quality, the impact of summer droughts on the water supply (periodic water stress), etc. The sense of urgency was even getting higher because of the impacts of climate change. To address these challenges, was and it is still evident that 'water' must become an integrated part of spatial development policies and their implementation. Partners of Aqua-add were aiming to improve their strategies and instruments for a better implementation of water in spatial planning and to raise stakeholders' awareness of the added value of water. Website: www.aqua-add.eu

PARTNER N. 4: COMUNE DI GENOVA, ITALY

COMUNE DI GENOVA

DESCRIPTION OF THE ORGANIZATION

The Municipality of Genova is a Local Authority. Genova is the biggest city in the Liguria Region and it is characterized by a narrow coastal zone with hills and steep mountains in the backcountry. Genoa is the third city in the Northern Italy for number of population for a total of 607.000 inhabitants, which increases to 850.000 considering the metropolitan area of ist neighborough. It is one of the biggest port of the Mediterranean and in the past was one of the industrial hubs of Italy. A very large historical center is both a tourist opportunity and a urbanistical and hydrogeological problem. All the actors directly involved in our fragile territory will work together to rethink the model of sustainable growth of the entire community. The perception of the changing, evolving and participating city is mandatory of the Municipality.

It is in charge to build effective instruments for a different concept of local administration, focused on: quality of life, liveability of the territory and revival of itself by a sustainable economic growth based on research, innovation and technology. Genova as a Smart City is the main vision foreseen in the long-term period and all the initiatives carried on in the early and medium-period will contribute to implement the Framework of the Strategic Management Plan of the City.

From this point of view, the City of Genova is actively involved in many research projects focused on resilience, safety and security, education and solidarity, green mobility, better quality of life, eco-sustainable growth and natural environment care, economy and employment, communication and promotion of the City, Port and infrastructures, city management.

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Paolo Castiglieri: has a degree in Economics and Business at University of Genoa. He works in the Municipality of Genoa as Responsible for the Smart City Strategies and European Projects. The activities implemented foresee a strong integration among technology, European Projects and International Crowd Funding. Since July 2015 he is General Secretary of the Genoa Smart City Association, created in 2010 and co-funded by the City of Genoa, University of Genoa and Enel, to facilitate the city transformation into a Smart City promoting a shared process involving enterprises proposals, citizen needs, public bodies strategies, innovation of research for a better quality of life. Since 2012 to 2015, he was in charge of the ICT Strategy and European Projects coordination within the Strategic Planning Department while, since 2001 to 2012, he worked at the Information System Department playing different roles: from 2003 to 2005 he held the information manager position by coordinating and managing ICT projects and workgroups; from 2005 to 2012 he focused his activity on cost reduction, security, servers and client service improvements and system integration. He gained a long experience in the management of complex organizational aspects. His fields of interest are Data Management, Security System,	Male

Service Oriented Architecture, Big Data Analytics and Internet of Things.	
Anna Jole Corsi: has an Architect Degree at Genoa University and she is recorded in the Order of Architect Planners, Landscapers and Conservationists of the Liguria Region. Since 2013 she is Head of the Special Projects Sector inside the Public Holdings and Sport Infrastructure Department of the Municipality of Genoa, working toward the valorization of the city's assets, in particular regarding public goods with historical and cultural bond. From 2013 to 2007 she coordinated the UrbanLab Sector employed in the new P.U.C. Urban City Plan Project adopted in 2011, collaborating with architect Renzo Piano as advisor and Richard Burdet as consultant. Since 1999 she's been a Director in the Genoa's Mayoralty, in the Urban Planning sector. In 2012 she coordinated the inter-departmental group for City-Port relations. since 1983 she worked for the Regione Liguria.	Female
Antonella Colombini: has an Architect Degree at Genoa University. From 2013 she is in charge of the Heritage Enhancement of Civic and Public Goods Office inside the Public Holdings and Sport Infrastructure Department of the Municipality. From 2013 to 2007 she was involved in the new Urban City Plan at the Urban Lab Sector, through the investigation of complex urban projects, related to the planning city-port relations. From 2007 to 1994 she was involved in planning implementation actions, while from 1994 to 1988 she worked at the Civil Protection Department of the Muncipality of Genoa. In the private sector she was in charge of implants design of industrial buildings.	Female
Stefania Manca: Master in GIS Expert Technician and Degree in Natural Science, works since 2011 at the Municipality of Genoa. Since june 2015 she belongs to the European Management Office of the Strategic Planning Department, involved both in management of the technical and administrative activities foreseen in some of European project were Genoa is a partner or coordinator (FP7, IEE, CIP program), to new project and proposals for the H2020 program. She has technical and ICT expertise as a common background useful for thematic projects followed by the Municipality. From 2011 to 2013 she was employed in ICT Department. Since 2000 to 2011 she worked for a private technical enterprise on ICT and GIS Application. Commitments were both Private Company to Public Institution. At Local and Regional level, she was strongly involved in planning management project in the Urban and Environmental fields and deployement of services of ICT support. On National and International Level she worked as technical developer on Life Beigua Geopark project, Interreg IIIC and Robinwood I.	Female

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

Municipality publications and Services

- 2008 Genova AAVV Quaderno n° 1 http://www.urbancenter.comune.genova.it/node/565
- 2011Genova Ecig AAVV Quaderno n° 2 http://www.urbancenter.comune.genova.it/sites/default/files/archivio/allegati/Q2UrbanLab.pdf
- 2012 Malaga AAVV (progetto Cat-med) Modelli Urbani Sostenibili – Metodologia di lavoro e risultati http://www.catmed.eu/archivos/desc9_CatMed%20Ita-Eng.pdf
- The Languages 7of the Territory's Culture – for an extended Europe bridging the Mediterranean - Technolangue Projet Interreg IIIB Medocc Meda Axe 3 – Mesure 3.4
- Transformation Agenda – Handbook on best practice and lesson learned on Integrated Urban Planning

RELEVANT PREVIOUS PROJECTS.

- HARMONISE. The aim of HARMONISE (A Holistic Approach to Resilience and SysteMatic ActiOns to Make Large Scale UrbaN Built Infrastructure SEcure) is to develop a comprehensive, multi-faceted, yet mutually- reinforcing concept for the enhanced security, resilience and sustainability of large scale urban built infrastructure and development, crucial in a flood-prone city like Genoa. The project recognizes the necessity to improve the design of urban areas and increase their security against new threats and their resilience. HARMONISE will result in significant resilience enhancement methods for large scale urban built infrastructure. The test area is along the Bisagno river in the Marassi district, near the football stadium.
- TRANSFORM. stands for an integrative approach to smart city development, including strong stakeholder involvement, data analytics and smart tooling, financial strategies and methodologies for co-creation, like service design thinking. The outcomes set standards for future European Smart City projects. It supports those local

stakeholders, responsible for investment and policy decisions, to turn their CO2 ambitions into a Transformation Agenda and into tangible Implementation Plans. Plans that take into account all relevant energy flows, environmental aspects, urban mobility, water and waste. The Transformation Agenda is tested in the Mela Verde (Green Apple) area in the coastal district of Voltri.

- CAT MED - The project aimed at the prevention of natural disasters related to climate change thanks to the convergence of metropolitan strategies and actions identified through the implementation and analysis of pilot sustainable neighborhoods in various cities involved in the partnership. One of the main goals of CAT-MED is the development of sustainable urban models which are based on the classical Mediterranean city; compact, complex and where the proximity of public services is determined by people's ability to access them on foot. The project is developing a system of common indicators and has carried out a pilot experience which involved the planning and design of the Green Apple (Mela Verde) district in Genova-Voltri. The project represents a symbol of territorial, social and technological cohesion, promoting participation and public debate through the launch of a platform for Mediterranean cities.
- TECHNOLANGUE: the project was based on sustainable urban planning (conservation, risk mitigation and responsible management of natural resources, eco-systems and of cultural and landscape heritage, the fight against global poverty and climate change awareness). The project resulted in the adoption of a shared approach based on assessment of environmental and social factors involved in alternative development strategies through the use of the information and communication technologies.
- URBACTIII - 2nd Chance – Waking up the "sleeping giants". The project gives to European cities the opportunity to work together, to share best practices, lessons learned and local action plans among the various stakeholders involved to develop models of organization and financing and transform local actors into protagonists of the "rebirth" of the buildings Retired and strengthen through the innovation potential of the local community. The project includes the development of cultural activities in the former military spaces: artists and cultural associations, schools and universities, organizations and institutions, the design and implementation of commissioning hydrogeological safety with bioengineering techniques

PARTNER N. 5: CITY OF TAMPERE, FINLAND

CITY OF TAMPERE

DESCRIPTION OF THE ORGANIZATION

Tampere is the third largest city in Finland and the largest inland center in the Nordic countries. Currently there are 225 150 inhabitants (31.12.2015) in Tampere, and close to half a million inhabitants in Tampere Region, which comprises Tampere and its neighboring municipalities. Tampere is one of the three most rapidly developing regions in Finland. It is a center of leading-edge technology, research, education, culture, sports and business. Tampere is a self-governing unit where the highest decision-making authority is vested in local council elected by residents. Local authorities provide basic public services for their residents, the most important of which relate to social welfare and health care, education and culture, the environment and technical infrastructure. The city of Tampere does not currently have any ongoing lighthouse projects (Horizon2020).

Tampere has a Storm water program (2012). It contains common principles for managing storm water in urban areas throughout the city organization, clarifies responsibilities, identifies development needs and highlights managing of storm water close to source. A lot of emphasis has been put on storm water management in Vuores. The system is one of the largest in Nordic countries and the most North of the world. It is estimated that waterfall in Finland will increase by 25% in the coming years due to the climate change. The main goals in storm water management in Vuores area are prevention of urban floods, maintenance of moisture conditions in valuable natural attractions, regulation of flow rates to the pre-construction level by drainage area, prevention of solids and nutrient load to waterways, and handling of the first flush. Same management principles apply to the entire Vuores area. Storm water management is regulated by town planning. Methods are specified with the aid of construction guidelines.

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Ranja Hautamäki: Doctor of Science (Architecture), landscape architect, executive landscape designer. Short description of work experience: 20 years´ experience in landscape design and 12 years´ experience at the city of Tampere, leading landscape design projects in the centre of Tampere and storm water park projects in Vuores.	Female
Pekka Heinonen: Master of science (Construction engineering), Specialist designer on storm water management. Short description of work experience: 3,5 years of experience on storm water management at the city of Tampere. 5 years of experience on water and wastewater management. Tasks include various storm water management related planning assignments, city plan controlling concerning storm water management, overall storm water management planning and development at city level, etc.	Male
Kirsti Toivonen: Bachelor of engineering (Environmental Technology, Environmental Planning) Short description of work experience: 4 years of experience on project management of Vuores project including various tasks concerning urban planning processes as well as construction planning of various storm water implementations in Vuores. Over 10 years of experience on various urban planning and impact assessments projects in Finnish Consulting Group.	Female
Pauli Välimäki: (M.Soc.Sc) Short description of work experience: Välimäki has worked as a project director of ECO2 - Eco-Efficient Tampere -program 2010-2015. Now he is a project director of Innovative Cities Program (INKA) at the city of Tampere.	Male
Maria Åkerman: Master of Science (Water and environmental engineering), Master of Administration Sciences (Local and regional governance), water management engineer Short description of work experience: 5 years of experience on water and wastewater management and storm water management at the city of Tampere. Tasks include storm water management development in various aspects, for example development of storm water management planning instructions, storm water management of construction sites and development of the storm water management policy in co-operation with the other branches of the city government.	Female

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

- Pekka Heinonen: Tampereen kaupungin yleisten alueiden hulevesien hallintarakenteiden ylläpito, Häme University of Applied Sciences, 2016. [*Pekka Heinonen's Master thesis on Storm water management structures maintenance on public lands in the city of Tampere (2016). Description: The research concerning storm water management structures maintenance on public lands in the city of Tampere was conducted issued by city owned company Tampereen Infra liikelaitos. The purpose of the thesis was to examine the location, condition, functionality, required maintenance measures and required resources of storm water management structures on public lands*.] http://www.theseus.fi/bitstream/handle/10024/110594/Heinonen_Pekka.pdf?sequence=1
- Maria Åkerman: Hulevesien hallinnan ohjauskeinojen ja toimintamallien kehittämisen mahdollisuudet – kohti kestävää hulevesien hallintaa, University of Tampere, 2016. [*Maria Åkerman´s Master's thesis on development of storm water management policy instruments and organizational practices (spring 2016). Description: The research concerning storm water management policy instruments in the cities of Tampere, Turku and Helsinki. The purpose of the thesis was to compare storm water management practices and to identify the best management practices in strategic level*.] https://tampub.uta.fi/bitstream/handle/10024/98989/GRADU-1463487286.pdf?sequence=1=1
- Ranja Hautamäki: Runomuuri ja sadepuutarha ovat Vuoreksen helmiä. "The poem wall and rain gardens are the treasures of Vuores." In the magazine Kuntatekniikka, Municipal infrastructure 4/2012, pp. 30–32.
- Vuores saa ainutlaatuisen hulevesipuiston. "A unique storm water park in Vuores." In the magazine Kuntatekniikka, Municipal infrastructure 1/2012, pp. 40–42.
- Vuoreksen keskuspuisto, hulevesien hallintaa ympäristötaiteen keinoin. "Vuores Central Park, storm water management and art." In the magazine Viherympäristö, Green environment 4/2009, pp. 12–15.

PARTNER N. 6: STAVANGER CITY, NORWAY

DESCRIPTION OF THE ORGANIZATION

Stavanger is situated on a peninsula along the south-west coast of Norway. Today 130.000 inhabitants live in Stavanger, although the greater region counts over 350.000, being the third largest populated area in Norway.

The local Government's main tasks are related to community development, planning and governance, and a wide range of welfare tasks. The municipality employs approximately 10 000 persons in six different service areas and departments. Since 2009 the city is a member of Covenant of Mayors Agreement, and since 2013 an associated member of the Eurocities' environment and knowledge forums. The city is a partner in the H2020 SCC1 project Triangulum, and aims at becoming a strong European sustainable city by integrating ICT, energy and mobility. As a signatory of the Covenant of Mayors, the city aims at reducing its CO2 emissions by 20 % by 2020. The City of Stavanger's municipal strategic plan for the climate and environment follows the long-term policy plan of the European Commission with the final goal of zero emission in 2050.

Stavanger is a coastal town, with approx. 170 yearly days of rain. Due to climate change, experts foresee an increase in rainfall, putting an increased pressure on water management. Furthermore, the expected sea level rise is likely to have consequences for Stavanger on a long term. Green solutions are important factors in the urban planning in Stavanger. Green belts throughout the city are important both for recreation purposes, and for water and air management. In the coming years, the city will revise its climate and environment plan, and implement a new urban plan for the city center.

The city of Stavanger has a long tradition for citizens' involvement. The city strongly believes in interaction between public sector, knowledge institutions and business community. The city has been the main center for the development of Norway as an energy nation for the past forty years, and has for eight years in a row been appointed the National Economic Development Region.

The Stavanger Region is integrated among the 15 municipalities in the Stavanger region when it comes to commuting and living. The majority of international energy companies such as Statoil have their headquarters here, as well as all major international operators and service companies. The Stavanger region is therefore affluent with a strong international orientation, a working environment for staff coming out of more than 130 different nations. This convergence of industry players has resulted in one of the strongest energy clusters in the world. However, with falling investments in the sector the past years, unemployment rates are growing, and the region needs to find new grounds for jobs and business. Stavanger`s vision is to expand its position as European capital of Energy to a comprehensive global arena for sustainable solutions.

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Torgeir Esig Sørensen, Head of Department for Parks and Roads: Over 20 years of experience in public open space management and development. Environment Chief Officer (1988-1995) and experience in environmental strategic planning. Certified International Park Professional (CIPP), president of IFPRA 2010-2013. WHO temporary advisor on urban green structure. Landscape Architect.	Male
Jarle Furre, director, Head of department for Water and Sewage: Over 20 years of experience in technical planning for public infrastructure. In charge of investments, operations and maintenance of the city's water and sewage systems. Civil Engineer.	Male

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

RELEVANT PREVIOUS PROJECTS.

- Resilient and sustainable local communities (ROBÆR)

  In the project ROBÆR (Resilient and sustainable local communities), local storm water management combined with blue and green initiatives are part of the solution. Stavanger is establishing two demonstration plants related to surface water: a dam and area adjustment in Emmaus recreational area, and an installation for local surface water

management to prevent flooding against residential areas at Hinnaberget. Our partner in the project, Nibio, runs a demonstration project on green roofs.
http://www.nibio.no/prosjekter/robuste-og-brekraftige-lokalsamfunn

- Triangulum

  Stavanger is a partner in the Horizon 2020 project Triangulum. The three point project Triangulum is one of the three European Smart Cities and Communities Lighthouse Projects, set to *demonstrate, disseminate* and *replicate* solutions and frameworks for Europe's future smart cites. The flagships cities Manchester (UK), Eindhoven (NL) and Stavanger (NO) will serve as a testbed for innovative projects focusing on sustainable mobility, energy, ICT and business opportunities. The project consortium combines interdisciplinary experience and expertise of 22 partners from industry, research and municipalities who share the same objective and commitment to develop and implement smart solutions in order to replicate them in the three follower cities Leipzig (D), Prague (CZ) and Sabadell (ESP). The overall budget of Triangulum is 30 million Euros (2015-2020). The European Commission funding (Horizon 2020) accounts to 25 million Euros. The project is coordinated by Fraunhofer IAO in Stuttgart and supported by the Steinbeis-Europa-Zentrum.

- Green urban development

  Madla – Revheim is a new housing area located 5 km outside of the city centre of Stavanger. The master plan contains 4000 new housing units, a new school, nursing home and kindergartens, in addition to an existing school. In the centre of the area, with arms stretching out to the surrounding green structure, lies «the green heart», a large sporting field and blue/green structure that will provide the new residents recreational and activity areas. The blue-green structure contains open water-solutions, and as a part of the storm-water management- and biodiversity-plan, a closed stream will be opened and lead the water to Hafrsfjord.

- Feasibility Study for Management of Surface Water in Sørmarka recreational area, Stavanger

  Development of a plan for local management of surface water, where water as an attractive element is considered. The project aims to contribute to finding new solutions to the increasing challenges related to flooding and surface water from the recreational areas in Sørmarka, to the housing areas in the hills below. The project will map the current situation, identify challenges, and suggest solutions for infiltration and slowing down the water from the recreational areas, thereby reducing the risk of flooding, minimizing the risk of negative impact on the area, and consider water as an attractive element. The project will be testing new technology and combine existing experience and knowledge on flooding in new ways.

  Towards an Eco-Districts Strategy for Sustainable Urbanism in the Gulf Region: Greater Doha as case study, 2012-2015, Qatar National Research Fund; The project aims at developing eco-district strategies to implement sustainability at the district scale.

PARTNER N. 7: CASTELLON - CASTELLON CITY COUNCIL, SPAIN

Ajuntament de Castelló

DESCRIPTION OF THE ORGANIZATION

Castelon City Council: Is a public body that represents a municipality of almost 200.000 inhabitants. Castellón is engaged with such an important European objective as reducing Energy dependence by introducing efficiency criteria while maintaining the quality of life and the future opportunities in our City. In the last years Castellon City Council has a commitment with the environment and the transition to a Low Carbon Economy, participating in lots of activities in order to reduce the CO2 emissions of the municipality. The municipality aims to be a living lab of new and innovative technologies and promote any activity to achieve low carbon economy objectives.

Castellón is working hard to reduce its energy bills and create a liveable city. The municipality is focusing efforts promoting systemic changes in the organization of buildings, energy networks and transport and showing the importance of the engagement of all relevant stakeholders in these processes, along with the on-going involvement of citizens. The City Council has a low carbon reduction commitment, focused in reducing the energy consumption in buildings, adapting their energy networks to integrate renewable energy production, developing urban energy storage systems and promoting more sustainable low-carbon transport systems

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Gargori Luis, Industrial Engineer: More than four years managing Sustainability and Energy Efficiency Projects / European Projects at CASTELLON CITY COUNCIL and has delivered many leading initiatives in the low carbon field for the city council including some via the Climate KIC programme. Responsible of the CIES Living Lab (municipal building with offices to rent by Energy Efficiency and sustainability companies. The building is a Living Lab within a Climate KIC project BTA, where companies can test their innovative products) Technical and financial manager of the following Climate KIC projects. - Pioneer Cities. - Transition Cities. - Building Technologies Accelerator - CoSuDS - Accelerator Management of 7th framework Projects: - Dorothy. Management of Horizon 2020 Projects. - CEPPI Management of Sudoe Interreg Projects. - CERURBIS	Male
Beltran Ines, Industrial Engineer: Responsible of water management in the municipality. More than eight years working in the water management department. Skills in project redaction and coordination.	Female

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

- CoSuDS, Collaborative transition towards sustainable urban drainage: making it happen at district scale. This project starts in june 2016 and finishes in december. The CoSuDS project aims at promoting the transition towards smart stormwater management from a collaborative perspective, bridging the gap between pilot implementation to long-term city strategy. The project will co-develop a "CoSuDS Toolbox" to be used for defining transition pathways in cities, being applied at district level for a city in Spain and integrating multiple actors in the process through collaborative charrettes. The pilot district will become a reference example for further upscaling and replicability in Europe.
- BUILDING TECHNOLOGIES ACCELERTOR, The BTA Living Labs are living laboratories: real-life buildings of home or work environments, not simulations. They are used for testing energy efficiency and sustainability. These labs are set up as real homes where research participants use new products and systems for a short or long period of time. They provide an ideal environment for testing new products, systems and processes. Participant feedback is collected and objective data is analysed. http://bta.climate-kic.org/
- PIONEER CITIES: Pioneer Cities brought together cities from across the Continent to consider solutions for the transition to a low carbon society. The project has been led by the city authorities themselves, as they are responsible for managing buildings, energy and mobility systems within their respective areas. The city authorities were also able to engage with a range of other stakeholders and actors to identify current schemes and initiatives that are operating. http://www.climate-kic.org/projects/pioneer-cities/
- TRANSITION CITIES: Transition Cities, funded by the Europe's Climate-KIC initiative, aims to bridge the findings of low carbon projects with wider European policy on climate change. Three key areas of activity, in energy, buildings and mobility, have been identified as areas where consolidating learning could really enable the change required to make significant emissions reductions within cities.The Transition Cities project will undertake pilots and experiments in relation to the these priority areas; promote new start-ups; leverage in other EU funds; enable cities to explore new institutional and business models in order to maximise impact on carbon reduction; and disseminate its findings widely across major European networks. The innovativeness of this project comes through methodology and new ways of working, as well as product development. It is hoped that its findings will influence public policy and procurement across European cities and stimulate the transition to the low carbon society. http://www.transition-cities.net/

- CERURUBIS: The main objective of the project is to encourage and promote the use of ceramics in urban areas through joint actions of ceramic clusters in SUDOE area, impregnating the ceramic with sophistication by integrating technology. Other objectives are to create products, methodologies and innovative services with high added value, which could be immediately transferred to the rest of the industrial sector. These services put together Competitive Intelligence studies and strategic analysis methodologies, searching as a result an efficient innovation, targeting the tastes and needs of the users and the social and technological trends. http://www.cerurbis.eu/en/

PARTNER N. 8: VILLE DE CANNES, FRANCE

DESCRIPTION OF THE ORGANIZATION

First business destination in France after Paris, Cannes is a city of 75,000 inhabitants in the south of France, which triple its population in summer or during major events such as the international film festival. The Municipality of Cannes has for many years an active policy in the fields of sustainable development and environment, as demonstrated by its Agenda 21 adopted in 2008 and renewed in 2015. The Municipality launched its Sustainable Energy Actions Plan in 2012 and was recognized in 2015 as "Positive Energy Territory for a Green Growth" by the French Ministry of Ecology.

Although international focus is the essence of the city, the Municipality of Cannes, however, has little part in European projects so far. Under the leadership of its new executive elected in 2014, the Municipality wishes to reflect international issues in the actions undertaken by its services, and to sustain participation in European projects, in line with its strategic priorities. During the first series of calls to 2014-2020 ALCOTRA and MARITTIMO, the Municipality of Cannes was winner as a partner in two projects.

Cannes is a town particularly exposed to natural hazards: flooding due to overflowing rivers, urban runoff, coastal flooding, forest fires, withdrawal / swelling clay and landslide. These risks are numerous, and unfortunately occur quite frequently. In a large urban development context, nature-based solutions (NBS) seem to be the best solution to prevent the devastating effects of these risks, and allow the city to become more resilient. Participation in UNaLab project is an extension of that belief.

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Thomas Onzon: General manager of technical services of the municipality, he has solid experience in sustainable development (potable water, waste water, waste, air quality, smart city, etc.). He has participated in European projects in his previous position.	Male
Joël Martiniere: Senior engineer, he led for twenty years' major projects in the municipality, such as the requalification of social areas. After the terrible October 2015 floods which caused 4 deaths and 250 million euros of damage, he became responsible for coordinating activities in the field of risk, and particularly the risk of flooding.	Male

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

RELEVANT PREVIOUS PROJECTS.

- ALCOTRA / JARDIVAL project, developing the small gardens of the French and Italian Riviera, total budget 1.822 k€, 9 partners.
- MARITTIMO / ISOS project, developing sustainable small island in Mediterranean Sea, total budget 1.495 k€, 9 partners.

PARTNER N. 9: INSTITUT PLÁNOVÁNÍ A ROZVOJE HL. M. PRAHY, CZECH REPUBLIC

Prague Institute of Planning and Development (IPR Prague)

DESCRIPTION OF THE ORGANIZATION

The Prague Institute of Planning and Development (IPR Prague) is a contributory organization established by the City of Prague. IPR Prague is the city's main strategic and conceptual workplace in the area of architecture, urbanism, development and city building, and it cooperates on significant decisions in these areas. The Institute elaborates and coordinates documents in the areas of strategic and land use planning and development, public space, transport, technical, landscape and economic infrastructure. For example, the following documents have been finalized; or are currently are currently being finalized at IPR Prague: OP Prague 2014-2020, Strategy for integrated territorial investments, the updated Strategic Plan of the City of Prague, the new Land Use Plan of the City of Prague (the Metropolitan Plan), the Prague Building Regulations, the Prague Waterfront Concept and the Manual for Creating Public Open Spaces. The Institute represents the City of Prague as a participant in proceedings on matters of development planning. The Institute's activities also include collecting, updating and utilizing data and information within the scope of applied research and expert cooperation with universities, scientific research institutions and non-profit organizations both at the national and international level. IPR Praha also plays an important role in introducing the open data practice in the public sector. Prague City Council empowers IPR to represent Prague in international projects, which currently also includes Triangulum H2020 project that aims establish the Smart Cities agenda in Prague.

City of Prague represented by Prague Institute of Planning and Development will contribute to UnaLab project by active cooperation within consortium, make every effort to develop implementation plan and thus replicate Lighthouses´s solution in the Prague´s conditions. It is however very important that the consortium has both the City hall and the IPR Prague as equal members as this is an important step in establishing a functional dynamic between the strategic and executive workplace. The UnaLab would be coordinated by the office of Strategy and development on behalf of IPR Prague and has the ambition is also to actively cooperate, learn and share our best practice.

The key purpose within the scope of the project is to further elaborate on the proposed measures of climate, resilience and green infrastructure as proposed in the Strategic plan of Prague. Moreover, UNaLab should build on the current projects and documents and should support the activities there are currently ongoing such as the preparation of the Strategy of adaptation to climate change and the preparation of the Green infrastructure concept. Great benefit should be the introduction of the Natural based solutions and Urban Living Lab model concepts. The City of Prague should be able to gain experience, as it will collaborate with partners from European cities to introduce more efficient processes in metropolitan planning. Finally, the project should lead to strengthening the inner city workflow and cooperation within the stakeholders that form the quadruple helix model of the city development. The aim and clear benefits is to break silos, is to implement a cross sectorial cooperation, but also secure conditions for the subsequent implementation of the project roadmap.

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Mr. Ivan Duškov: Head of the Strategy and development department, which is responsible for the preparation of the Strategic plan of Prague 2030. Ivan's responsibilities involve senior management oversight of the project and communication of the UNaLab project aims to the political leadership.	Male
Ms. Eva Bartoníčková: Part of the Department of infrastructure and landscape with the specialization on water management and resilience. Eva's responsibilities involve the main supervision of the expert input in the UNaLab project.	Female
Mr. Štěpán Špoula: Part of the Spatial planning department, focusing on the environmental themes of urban development and part of the team preparing the Green infrastructure concept. Tomáš is part of the team of authors of the Strategic plan of Prague. Štěpán's responsibility involves supervision of the expert input in the area of sustainable environmental development and securing synergy with the preparation of the Green infrastructure concept.	Male
Mr. Petr Peřinka: Part of the strategy and development department, key project coordinator of the Strategic plan of Prague 2030. Peter's responsibility involves granting synergy with the priorities in the areas of environment and resilience as outlined in the Strategic plan with UNaLab project.	Male
Mr. Adam Pajgrt: Part of the strategy and development department, responsible for the Smart Cities agenda at IPR Prague, this includes the finalized Morgenstadt City Lab report done in cooperation with the Fraunhofer	Male

institute and the H2020 project Triangulum from the Smart Cities and communities call. Adam's key responsibilities include granting synergies with the Smart Cities priorities of Prague and individual pilot projects and transfer of the experience with the coordination of the H2020 projects.	

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

- The Strategic plan of Prague: the umbrella project which puts forward a framework of the strategic integrated development of the city of Prague to the year 2030.
- The project Streams for Life: Project aims at bringing the biodiversity of the city by the means of revitalization technically modified (concreted, piped etc.) basins in natural areas is an important step in protecting and improving the environment, especially in urban agglomerations.
- Concept of green infrastructure: Aims to create a comprehensive system combining natural and semi-natural, domestic or urban landscape structure in a unified whole, which contributes to the conservation of biological diversity, the company provides cost-effective and sustainable service. Green infrastructure is a suitable tool for connecting built-up area with open landscape and one of the effective means to improve microclimate conditions and adaptation to climate change.
- Geoportal Praha: Geoportal is primarily used for viewing maps and information retrieval on the territory of Prague. The site offers more than thirty maps Prague from aerial images from different years, despite the noise map to map the most photographed places in Prague. Website: http://www.geoportalpraha.cz/
- Opendata Praha portal: The portal gathers the dataset of open data of the major public institutions in Prague and puts them forward. Currently there are 168 data-sets from 13 city organizations. It represents the Open data approach, but also the predisposition for data driven decision-making and planning. Web portal website: http://opendata.praha.eu/

RELEVANT PREVIOUS PROJECTS.

- The project Triangulum: The first horizon 2020 for a municipality in the Czech Republic. The project is focusing on the agenda of Smart Cities. The project is cross-sectorial oriented and pushes forward to establish working processes, absorbing good practice and anchoring the Smart City principles.
- Morgenstadt City Lab: Morgenstadt City Lab, project done in coordination with the German research organization Fraunhofer. The aim of the project is the development and implementation of socio-technical innovations and projects in order to ensure sustainable development in cities. A thorough analysis of the current situation was undertaken, not only in the development and management of cities, but also in terms of energy sustainability, mobility and ICT.
- Additional pending projects: Currently IPR Praha together with the City Hall of Prague have submitted two Interreg Central Europe proposals that focus on regional development and environmental theme among others strongly pushes for a regional cooperation and the sharing of good practice with other cities large cities in the region.

PARTNER N. 10: BAŞAKŞEHİR MUNICIPALITY, TURKEY

BAŞAKŞEHİR BELEDİYESİ

DESCRIPTION OF THE ORGANIZATION

Başakşehir is one of 39 second-level districts of Istanbul, founded in 2008. The population was 342,422 in the 2014 Census and 800,000 in the 2020 estimate. Başakşehir Municipality is the local government of Başakşehir District, established after the local government elections in 2009. Basaksehir Municipality has 19 departments to handle the city issues, including sanity services, social aids, municipal police services, IT infrastructure, education, cultural activities, urbanization, and so on.

Başakşehir Municipality is the one municipalities with great budget reserved for IT investments, about €4,000,000 per year. From 2009 to 2015, many IT projects managed by municipality have been completed. A brief summary of major projects are as follows:

As Başakşehir Municipality, our main tasks are to (i) provide highest quality of public services to the citizens, (ii) improve the life quality of citizens through implementing the most effective and efficient technologies and projects (iii) enable citizens to be participative in testing and development of new value added products and services that are for the benefit of the public at large.

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Bekir Temel: is the director of IT Department of Basaksehir Municipality. His expertise includes IT project management, software testing, GSM telecommunication and user experience. He has graduated from Computer Engineering Department of Bahçeşehir University in 2005 and got his MBA degree on Management Information Systems Program from Social Sciences Institute of Bahçeşehir University in 2013 in the field of Smart City Applications. He has worked on several GSM services projects as a software tester in Turkcell, the greatest GSM operator of Turkey, and ICT projects in Başakşehir Municipality. He has been one of the founder members of Başakşehir Living Lab.	Male
Soner Dedeoğlu: is the chief information officer of IT Department of Basaksehir Municipality. His expertise includes IT project management, software engineering, smart cities, distance education and web technologies. He has graduated from Computer Engineering Department of Bahçeşehir University in 2005 and got his MSc degree on Computer Engineering from Natural Sciences Institute of Bahçeşehir University in 2008 in the fields of Chip Design and Video Processing. He has worked on educational technologies as software developer and project manager for several years, and ICT projects in Başakşehir Municipality. He has been a part-time instructor in Bahçeşehir University on web programming for 4 years and is continuing his PhD studies at same university on field of Smart City Applications. He has been one of the founder members of Başakşehir Living Lab.	Male
Ömer ONUR: is the general coordinator of Basaksehir Living Lab. He is expert on Project Management and Organizational Development. Omer Onur has more than 30 years of corporate experience by working most of his years in Ford Motor Company, Ericsson and Turkcell Communications at various management roles in the areas of Organizational Development, Quality, IT, Strategy and Project Management. In the past 2 years Omer has been running Basaksehir Innovation &Technology Center (Basaksehir Living-Lab) focused in development of innovative products and services as well as supporting entrepreneurs and startups. Omer has a B.Sc. in Production Engineering from Aston University, UK and an MBA degree from Graduate School of Management, Melbourne University.	Male
Can Tunçsav: graduated from Middle East Technical University, Metallurgical Engineering Department. He has 12 years of corporate experience in telecommunication business by working in Ericsson, Sony Ericsson and Smile. He had some management roles in these companies such as merchandising manager, field marketing manager. He is in charge as Assistant Coordinator in Basaksehir Living Lab Project Team for 3 years.	Male

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

RELEVANT PREVIOUS PROJECTS.

- Başakşehir Innovation and Technology Building (LEED Certification at Gold Level).
- Şamlar Natural Park.
- Smart Garbage Collection System
- Başakşehir- Bahçeşehir Artificial Lake and Recreation Area
- Başakşehir Water Valley
- Waste Water Purification System
- Solar Powered Lighting

PARTNER N. 11: ENOLL – EUROPEAN NETWORK OF LIVING LABS, BELGIUM

DESCRIPTION OF THE ORGANIZATION

The European Network of Living Labs (ENoLL) is a global network of open innovation ecosystems (Living Labs) that places people at the centre of product and service development and innovation. The network and its members provide innovation services for small and medium-sized international companies, the public sector, organisations and citizens. ENoLL promotes the development of business and industry and the creation of tax revenue and jobs.

ENoLL has recognised nearly 400 living labs from around the world maintained by municipalities, universities, regions and companies acting also as the development and piloting partners. Of these, 170 make up the core for piloting European industry and innovation policy and are involved in in-depth cooperation with regions and the European Commission's Directorates-General.

The ENoLL network aims at creating Pan-European experiments and prototypes for new markets, based on the Digital Single Market. It is an open engagement platform where new business models can be co-design, experimented with and developed all based on a quadruple helix approach, creating safety nets for experiments and prototypes with new roles of the public sector as enabler and catalyser. ENoLL can combine European vertical specialisation domains (health, smart cities, creativity, education etc.) with horizontal and territorial specialisation.

The ENoLL international non-profit association, as the legal representative entity of the network, was founded in 2010 and is headquartered in Brussels, at the heart of Europe. ENoLL supports the evolution and the uptake of the Living Lab paradigm throughout Europe and worldwide, contributes to the creation of a dynamic, multi-layer and multidimensional European Innovation Ecosystem, and facilitates the cooperation and the exploitation of synergies between its members and external stakeholders.

Living Labs refer to user-centred, open innovation ecosystems based on a systematic user co-creation approach integrating research and innovation processes in real life communities and settings. In practice, living labs place the citizen at the centre of innovation and have thus shown an ability to better mould the opportunities offered by new ICT concepts and solutions to specific needs and aspirations of local contexts, cultures, and creative potentials. Living Labs develop activities and provide services such as ideation, analysis, design, deployment, use, evaluation, research and management of innovation in real-world convergence of different forms of research and practices. They can have different typologies (top-down vs bottom-up, driving party roles: Living Labs as providers, users, utilizers, and enablers1), and deliver activities in many different topics and domains, from health to culture, manufacturing and many others.

The living lab approach offers benefits to companies, users, developers, public administrations and financiers and from a territorial perspective living labs can help European Regions identify and valorise their respective economic niches and competitive advantages in the perspective of Smart Specialisation.

ENoLL is a network of innovation networks or ecosystems represented by a legal entity so called the living lab host organisation. The ENoLL members (host organisations of the living labs or ecosystems) are mainly research institutions, public local and regional authorities and agencies, public-private innovation actors or private companies. They all represent a community of change makers that have contributed over the years to generate business and societal positive impact through open and user driven innovation.

ENoLL is active in 20 of the 28 EU member states, and in 2 of the candidates (Serbia and Turkey). Present in all the continents with a 20% of members based out of the European Union. The whole list of ENoLL members can be found at http://openlivinglabs.eu/livinglabs

As a legal entity, ENoLL international association focuses on facilitating knowledge exchange, joint actions and project partnerships among the members, promoting living labs and enabling their implementation worldwide, and, influencing policies.

[1] Westerlund & Leminen, 2011

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Ana Garcia Robles: Professional trained as a Telecom engineer and with an Executive International MBA. Her expertise lies in the fields of ICT technology strategy and management, innovation management, project management, and community and partner management. She has extensive experience working in large ICT companies, technology and innovation centers, and also in research and innovation oriented international associations. +15 years working in international and multicultural environments, developing international collaborative projects and with experience as team manager of both engineers and multidisciplinary teams. She also has some experience as entrepreneur. Strong background in engineering, network and service design, and technology management in the telecom industry (+10 years). Her techno-focused profile has been enriched in the last few years by business and social-oriented knowledge and skills. She has developed innovation management methodologies and projects (open, collaborative and user-centric innovation), and intensively worked in project acquisition, development of strategic alliances, Marketing and Communications, network management and European innovation policies, in particular in the areas of Smart cities and urban innovation, e-Health, ICT for culture and creative industries, Digital social innovation, ICT for Education, ICT for food and Intelligent mobility. Ana has collaborated in more than 14 European Research and Innovation projects in the last 4 years.	Female
Lorna Stokes: Lorna holds a BSc in International Management & Modern Languages (French & Spanish) from the University of Bath in the UK. Lorna's passions and skills lie in communications, community building, stakeholder engagement and event management. Previously, she managed the HUB Brussels, a local space & community that facilitates collaborative entrepreneurship for a better world. Since February 2014 she works for the European Network of Living Labs (ENoLL) as the Communications Manager & Project Assistant. She is currently working on numerous FP7 projects related to the creative industries, education and serious gaming (PELARS, Europeana Creative & JAMToday).	Female
Paolo Aversano: is an Italian researcher based in Brussels and working for the European Network of Living Labs. He earned a Bachelor`s degree in Communication, Journalism & Cinema at the University of Bari, a first Master`s degree in Marketing at the University of Naples and a second Master's degree on business models and European policies at the VUB (Vrije Universiteit Brussel). He previously worked as a researcher at SMIT, the research centre of the VUB of Brussels focused on Media, Information and Telecommunication Studies. From September 2013 onwards he has been working at ENoLL (the European Network of Living Labs) on project and network development: his research is currently dealing with a number of European-funded projects focusing on smart cities and the creative industries.	Male
Zsuzsanna Bodi: Has French MBA-MAE degree in Management and Business Studies (Université Jean Moulin (Lyon). Previously she obtained M.Sc. in Engineering and Management degree at the Technical University of Budapest. Has 8 years' experience as Project manager. She has led a team of 16 people in multinational environment, developed business strategy studies and also participated in several national and European projects. She has contributed during website and platform developments, made software ergonomics studies and coordinated projects including gamification and Open Innovation methodology. Currently she is dedicated to programmes and projects on Future Internet (FIspace); Smart Cities and Mobility (ECIM); Cross-border, Cross-sector Collaboration (ACE), and Game design & serious gaming (JAMToday).	Female

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

- "Citizen-Driven Innovation: A Guidebook for City Mayors and Public Administrator". "Eskelinen, Jarmo; Garcia Robles, Ana; Lindy, Ilari; Marsh, Jesse; Muente-Kunigami, Arturo. 2015. World Bank, Washington, DC, and European Network of Living Labs.
- Conference proceedings of OpenLivingLab Days 2014 (http://www.openlivinglabs.eu/node/923)
- Conference proceedings of OpenLivingLab Days 2015 (http://www.openlivinglabs.eu/node/923)
- A collection of Proceedings from the 4th ENoLL Summer School by ENoLL 9http://www.openlivinglabs.eu/node/923 (http://www.openlivinglabs.eu/node/923)
- Introduction to ENoLL and its living lab members (booklet 2015)

RELEVANT PREVIOUS PROJECTS.

- FIWARE (Fiware.org) and in particular the CONCORD project, FIspace project (www.fispace.eu) and CreatiFI (www.creatifi.eu).

- Fusepool (www.fusepool.eu) special call for SME Digital content and Languages,
- InnoMatNet (www.innomatnet.eu) (Networking of materials laboratories and innovation actors in various industrial sectors for product or process innovation, funded under the NMP theme of the FP7)
- CIP Smart City projects: EPIC (http://www.epic-cities.eu/), SMARTIP (http://www.smart-ip.eu/), CitySDK (http://www.citysdk.eu/), SPECIFI (www.specifi.eu), MyNeighbourhood (http://my-neighbourhood.eu/), ECIM (ecim-cities.eu)
- ACE project: The overall aim is to deliver targeted cross border services to highly innovative entrepreneurs, start-ups and SMEs in the ICT sector in order to accelerate their growth

PARTNER N. 12: ERRIN - EUROPEAN REGIONS RESEARCH & INNOVATION NETWORK, BELGIUM

DESCRIPTION OF THE ORGANIZATION

Founded in 2001, ERRIN is a unique Brussels-based platform of more than 120 regional stakeholders organisation most of whom are represented by their Brussels offices. ERRIN promotes knowledge exchange between its members, focusing on joint actions and project partnerships to strengthen regional research and innovation capacities. Through these actions ERRIN seeks to contribute to the implementation of the Europe 2020 Strategy, the Innovation Union flagship initiative and Smart Specialization strategies.

ERRIN is a respected, professional, open and dynamic Brussels-based network within the Brussels research and innovation landscape. ERRIN supports regional research and innovation capacity building by facilitating regional collaboration and partnerships and the open and rapid exchange of knowledge in a context of trust and confidence. ERRIN supports its members engage in and shape EU research and innovation policy, develop successful projects at the EU level and raise their profile in Brussels.

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Richard Tuffs, Main Researcher: Richard has been director of ERRIN since October 2010. He has been based in Brussels since 1987. Richard is an expert on EU research and innovation policy and is often invited to European meetings to present both the ERRIN network and its thinking on research and innovation. He also often moderates seminars on research and innovation issues in Brussels and has contributed to many articles in research and innovation based journals. Richard Tuffs and all ERRIN staff are experienced in the organizing public events and in closely collaborating with European Institutions Other European Networks and Organisations to reach a wider number and range of stakeholders. Richard is a policy expert in various sub-areas of innovation where the regional dimension is important. His key expertise is concentrated around smart specialisation. Richard has been invited onto the Advisory Board of several EU projects to support the project development with his policy expertise. Richard has always been active in producing research and innovation policy positions on behalf of his region first and since his appointment as the director of ERRIN, on behalf of over 100 members from 23 countries.	Male
Ryan Titley, Researcher: Ryan Titley recently re-joined ERRIN as the Communication and Planning manager after a two year break from the network. Ryan, who has been working in Brussels for 8 years, has been involved in the project management and dissemination of a range of European funded projects from FP7 through to the Daphne III programme. Ryan has developed a number of bespoke websites and communication plans for EU projects, using a variety of difficult media platforms to reach diverse stakeholder groups. He holds a BA Business Studies, an dPRINCE2 ®APMG-International	Male

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

- ELAN Brussels Technical Mission

  Organised by ERRIN, this Technical Mission which took place in Brussels at the start of March 2016, brought together institutions from the European and Latin American Innovation Ecosystems in parallel to the European Commission's 'Clusters go International' event. The four-day mission, which included a half-day session in the European Parliament, looked to promote networking, sharing experiences and ultimately generate concrete partnerships, establishing the basis for the next two years actions in co-generation and opportunity development of technology-based business opportunities (TBBO).

RELEVANT PREVIOUS PROJECTS.

- ELAN Network: www.elannetwork.org

  European & Latin American Technology Based Business Network (ELAN Network) aim is to generate technology-based business opportunities (TBBO) between European and Latin American SMEs. ERRIN acts as a facilitator between European regions and LAC organisations to enable TBBOs.
- SmartSpec Project: http://www.cardiff.ac.uk/cplan/research/smartspec

  Within the SmartSpec Project ERRIN supported 10 of its member regions on a 'Learning Journey' which looked to assess implementation of Smart specialisation Strategies across Europe.
- Smart Cities Market Place: https://eu-smartcities.eu/

  ERRIN manages two Action Clusters within the European Innovation Partnership on Smart Cities and Communities (EIP-SCC). The EIP SCC is an initiative supported by the European Commission bringing together cities, industry, SMEs, banks, research and other smart city actors.
- Culture for Cities & Regions: http://www.cultureforcitiesandregions.eu/

  ERRIN, along with EUROCITIES and KEA are working in the Culture for Cities & Regions to take stock of existing practices all over Europe to exchange and promote transfer of knowledge to better understand successful cases of cultural investment.
- PLACES: http://www.openplaces.eu/. The PLACES project, which was coordinated by Ecsite, brought together more than 60 European City Partnerships in almost 30 countries. ERRIN was a leading partner in the project and managed the dissemination WP which included 4 large scale Annual Science Conference.

PARTNER N. 13: LAND - LANDSCAPE ARCHITECTURE NATURE DEVELOPMENT, ITALY

DESCRIPTION OF THE ORGANIZATION

LAND, Landscape Architecture Nature Development, established in 1990 in Milan by Andreas Kipar and Giovanni Sala, is a group of professionals working in the field of landscape architecture. Within the group, research and inter-disciplinarity are at the base of the working practice. Over the years, different professionals such as landscape architects, agronomists, naturalists, environmental engineers, urban planners, designers and architects, have joined the group. Ranging from the design of open spaces to the design of green areas and landscaping in general, LAND's approach has always been extensive. The latter was made possible also thanks to an attentive examination of the territorial scale. Since its inception, LAND has taken a keen interest in urban and territorial planning. This commitment led to the green plans of important cities such as Cagliari, Vercelli, Milan and Rome.

Constantly working in the perspective of a continuous dialogue between architecture and urbanism, LAND has been confronted with and has developed the theme of the recovering of abandoned areas. Here, we cannot fail to mention the recovery of large areas in Napoli, Torino, Venezia, Marghera and Milan. Over the years, the office has also started to be increasingly committed with the multi-disciplinary approach of strategic master plans at a territorial scale. Here, particularly important were the plans for the industrial division of the Ruhr area in Germany as well as Brianza, Carso and Emilia in Italy. In 2007, LAND launched a process of territorial diffusion, establishing specialized teams both within national and international boundaries: LAND Milano, LAND Roma and LAND Sardegna joined KLA, Kiparlandschaftsarchitekten, an office which was already active in Italy and Germany since 1985.

Today the group features a team of proven experience holding the innovative techno-scientific knowledge required for a high-quality service. The Group guarantees assistance to its private and public clients through a certified Quality Management System which ranges from environmental evaluations to urban plans and from the concept to the construction and management of landscape projects. 2 LAND Milano Srl Milan, 07.06.2016 After several design experiences in foreign countries, LAND Group has started to implement a focused process of internationalization towards new geographical areas such as Russia, Brazil, Turkey, and the Middle East.

LAND aims to deliver its professional experience and design approach to the UNaLab project in order to contribute in the development of WP5 "Water and Climate Resilient Urban Living Labs" as addressing one of the company main research scopes, the implementation of nature-based solutions in challenging urban contexts to face social and environmental risk and mitigate climate change effects. LAND's focus is working with nature and dealing with the living environment aiming to social development: the company deals with the sustainable development of the cities of the future both in research and in projects taking into account not only the environmental output but also the social and economic improvement of places. Water and climate resilience are becoming a priority in major urban areas in order to guarantee a proper quality of life to citizens and define sustainable urban development models. According to the EU guidelines on Green Infrastructures LAND shapes its multidisciplinary approach to private and public projects. This approach matches the main scope of front-runner cities involved in UNaLab proposal: creating by 2020 healthier and greener European cities, with increased resilience to climate change and water-related challenges thanks to the implementation of nature-based solutions, with better living conditions for all, increased green infrastructure and biodiversity, improved air and water quality, reduced noise and health costs, improved mobility conditions, opportunities for urban farming and increased social cohesion.

LAND has a wide experience of collaborations with public authorities and local associations in the development of territorial strategies and landscape plans: its multidisciplinary approach helps facing complex urban challenges and initiate effective cooperation in participatory urban processes. As the WP's proposal targets a co-creative process towards the implementation of NbS, the company's contribution will support local co-creation process, co-design of projects, integration of projects and measures into wider strategies and activities of the city as well as identification of potential sites for replication.

Territorial marketing strategies Landscape management and revaluation plans. Urban master plans addressing environmental and landscape issues. Territorial marketing through sustainable urban development. Urban planning Urban landscaping plans; 3 LAND Milano Srl Milan, 07.06.2016. Landscape Planning for the territorial government; Plans for environmental management of new settlements; Large-scale public works and new rural areas. Landscape design Landscape preliminary design, design development, construction documentation and construction administration of public and private works, such as: - parks and gardens; - urban green, green sports, green roofs and green walls (indoor/outdoor) - rehabilitation of landfills, former quarries, brownfields and degraded areas Environmental analysis and evaluation Specialized analysis for the landscape and sciences of the territory. Environmental feasibility studies for territorial transformation projects and for renewable energy. Environmental Impact Assessment (EIA, SEA, Permissions landscape; Authorizations for the environment, etc.). Cultural initiatives LAND is also active in the promotion of cultural activities associated with environmental issues concerning the territory and the landscape. Among its international initiatives, LAND promotes a new revolutionary strategy called GREEN LANDSCAPE ECONOMY. The GLE is a new approach to sustainability where landscape plays the main role. Furthermore, GLE is a new operational method whereby each of the transformation projects aims at representing a new step towards the environmental requalification of the area. Here, for a better capitalization of the inherited landscape, GLE takes special care of the existing landscape.

GLE is also a new strategy / action plan, which aims at enabling a new network of synergies between the different phases of the design. The outcome of this is a more efficient process and a better overall result. Finally, it is a new model of urban development that says NO to consumption of land and YES to urban regeneration.

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Andreas Otto Kipar, Architect / Landscape Architect: International Architect and Landscape Architect, Andreas Kipar is President, co-founder and Technical Director of the Company LAND Milano Srl. He is Member of the 'German Association of Landscape Architects (BDLA), of the Italian Association of Landscape Architects (AIAPP), of the German Association for the Art of Gardens and Cultural Landscape (DGGL) and of the National Institute of Urban Planning (INU). In 1985 he founded KLA kiparlandschaftsarchitekten Milano - Duisburg (Germany) and in 1990 he founded together with Dott. Giovanni Sala, the design company LAND - Landscape Architecture Nature Development. He works in several universities in Italy and abroad; currently, he is a professor at the Politecnico di Milano where he teaches Public Space Design.	Male
Matteo Pedaso, Urban Planner: Since 2004, he operates at a professional level in the LAND Group and since 2009 is responsible for the area of Strategic Planning and Development of LAND Milan. He deals with	Male

urban planning, regional marketing, planning processes and complex projects of urban transformation and landscape. He coordinates a multidisciplinary team to draw up plans and strategic projects of territorial development and landscape. His major strenght is his creative approach and the continuous search for innovative solutions to economic, environmental and social issues.	
Andrea Balestrin, Architect: Andrea Balestrini studied architecture and urban planning both in Italy and Germany. During his studies he focused on the topic of landscape planning by attending and organizing seminars and workshops on the topics of sustainability and water sensitive urban design in Cairo and Lima. In the Peruvian capital he was an intern at the municipal office for green areas and parks SERPAR, wherefrom developed his diploma thesis in collaboration with local universities and institutions. Andrea dealt with different non-governative associations by tking part in international workshops in the fields of sustainable arhitecture and cultural landscapes in Portugal, France, Perù and Italy. His work background gathers both academic experiences at the University of Stuttgart (ILPÖ, IUSD) and private firms in Stuttgart and Milan. Since 2014 he works as urban planner and landscape architect at LAND S.r.l.	Male
Ilaria Congia, Architect: Ilaria Congia completed a five-year professional degree in Architecture at the University of Cagliari, School of Architecture in April 2011 and completed a Second Level Master in Landscape Architecture at the Polytechnic University of Catalunia, Barcelona in September 2013. She initially undertook work experience in the field of architecture and urban design during a five-month internship carried out in the study of A&F Arquitectes in Barcelona. Before her graduation she also spent some time in China where she gained a new perspective on architecture and urban planning; this chance allowed her to manage relationships in a culture she was previously unfamliar with. When she was about to end her master at the UPC, she got the opportunity to work at the EMBT MirallesTagliabue in Barcelona, where she worked as a fulltime intern and special collaborator in some international design competitions and architectural projects. After this, she started an internship in the field of landscape and urban design at OKRA Landscape Architects bv in the Netherlands, where she put into practice the themes that she studied during her master. Since October, 2014 Ilaria has been working for LAND S.r.l., working in different landscape projects and competitions.	Female

PARTNER N. 14: ENG - ENGINEERING – INGEGNERIA INFORMATICA S.P.A, ITALY

DESCRIPTION OF THE ORGANIZATION

ENGINEERING Ingegneria Informatica S.p.A. is the head company of the ENGINEERING Group. Engineering was founded in 1980, and it is currently the first IT group in Italy, among the top 10 IT groups in Europe, with over 7.300 employees and 43 branch offices in Italy and abroad, with an established presence in Belgium, Lebanon, Republic of Serbia, Latin America and USA.

The group produces IT innovation to more than 1.000 large clients, with a complete offer combining system and business integration, outsourcing, cloud services, consulting, and proprietary solutions. Engineering Data Centres offer business continuity and IT infrastructure management to about 15.000 servers and 230.000 workstations. In 2013, consolidated revenues are 822,8 millions of euro.

Engineering operates through in the following business units: Finance, Central Government, Local Government and Healthcare, Energy & Utilities, Industry and Telecoms, delivering innovative IT solutions to main vertical markets: Aerospace, Insurance, Automotive, Banks, Consumer Products, Defence and Aerospace, Energy & Utilities, Training, Central & Local Government, Homeland Security, Life Science, Manufacturing, Media, International Organisation, Retail, Healthcare, Telecommunications, Transports, Welfare.

Since 1987, Engineering innovation capability is supported by its Central Department of Research & Development, with around 250 researchers currently involved in over 50 research projects. R&D Department have been participating in several National

and European research initiatives co-funded by EC and the Italian Research Ministry, with about 20M euro/year of co-funding. The R&D Department is located across 6 different locations in Italy and in Europe.

The activities include the various challenges linked to the future of the Internet, intended as a global information system and computing environment, smart cities and Public Administration Innovation. The goal is to contribute to the change in markets and companies via solutions that can create innovative experiences for the users, in order to encourage a safe, aware use of information technology.

ENG is one of the founders of the ETP NESSI and EOS (the European Organisation for Security), member of the Steering Committees of NEM and Networks (until October 2013), and among those large industries which were involved in the definition of the FI-PPP. ENG also seats in the Executives Industrial Board of the FI-PPP.

The Open Public Service Innovation (OPSI) Laboratory is paving a structured pathway in between innovation and research structured, addressing Public Administration domain. It is also enlarging its boundaries of investigation towards Smart City and Smart Communities themes. The vision of the OPSI laboratory is to drive research effort by gathering real needs of the territory (bottom-up approach) offering Technological and design expertise, and to provide an integrated framework, composed by technologies, methodologies and skills, supporting the transparency and accountability in Public Administration towards paradigm shifting from eGovernment to Smart Government.

Main roles in the project:

ENG will lead WP4 "Data Management Platform & Tools". Within this work package, ENG will bring into the proposal the knowledge related to the "Collective BI City performance monitor", "Iot Data Opener Engagement & co-creation environment", "Open Process Designer" and "Open Data workspace" assets, coming from previous research projects, to be further investigated and improved, meeting UnaLab requirements. ENG will provide the Consortium with the know-how related to FIWARE open platform and the "Data Visualization - SpagoBI FIWARE Generic Enabler Implementation", that will be the basis of the Collective BI City performance monitor asset. In order to do this in the right way, ENG is involved in requirement identification activities as a part of WP2, in particular concerning the co-creation models and tools. ENG is also involved in WP3 and in the activities related to the WP5, in order to support from a technical point of view the pilots in the use of the assets that ENG provides in WP4, as well as in activities related to Exploitation and replication (WP6).

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Giovanni Aiello: Project Manager, PMP® certified by the Project Management Institute (PMI) with license #: 1741076, Head of Public Administration Innovation Group (part of Open Public Service Innovation Laboratory). He is an engineer on computer science. He graduated in 2004 at the University of Palermo (Italy). He is a project manager and senior researcher on different projects regarding the innovation of Italian and European Public Administrations. His research interests include: Open Government, M-Government, Open innovation and open service innovation, social networks analysis, collective intelligence paradigms, social innovation paradigms, Rule based systems, inference engines, workflow management systems, business process modelling, Natural Language Processing, Web 3.0 technologies, cloud computing. He is the first author of several scientific publications about computer networks, business rules management approaches and software engineering. He works in WeLive Project, funded by the European Commission under the H2020, in management activities.	Male
Marco Alessi: Head of Open Public Service Innovation Unit, within R&D Laboratory. He is a Software Engineer and Computer Scientist. He got his University Degree in July 2000 from University of Palermo, at which point he started to work as a researcher in Engineering R&D laboratory. He takes care of several issues related to the management of research projects, financed by both the Italian Ministry of University and Research and the European Community, from the project proposals drawing up to the technical coordination of the team for the project development. He has authored several scientific publications. PMP6 PMI Certified in January 2010. He is currently coordinating the Venis project (www.venis6 project.com), funded by the European Commission under the FP7.	Male
Roberto Di Bernardo: Senior Researcher, head of Open Government Group (part of Open Public Service Innovation Unit). He is an Electronic Engineer; he got his University Degree in July 2002 from University of Palermo. In December 2003 he got a Master's Degree in "Internet Software Engineering" from University of Catania. He has worked as researcher in Engineering R&D Laboratory since 2004. He has been involved in management and technical activities in many Italian and European projects as well as in project proposal drawing up activities. At the moment, he is involved in WeLive and Festival projects (H2020) and FrontierCities project (FI-PPP phase III), he is Italian Cluster leader in TEDS4BEE project (CIP-ICT-PSP) and he is	Male

supporting the coordination of CLIPS project (CIP). He leaded the activities related with the service layer definition/implementation in OUTSMART project (FI-PPP phase I) and works in management activities in the SIMPATICO project (H2020-Euro6-2015).	
Isabel Matranga: has a degree in Political Sciences from the University of Palermo. She has been working for Engineering Group R&D laboratory since 2002. Since 2006 she is working in the context of European funded projects cooperating with the heads of the Engineering R&D units on 'Infrastructures for distributed computing' and 'Open Public Service Innovation' mainly taking care of the identification and implementation of communication and exploitation strategies to improve the impact of research results. She is currently leader of the activities related to the analyses and identification of Business Models for the ClouT solution and has acquired strong competence both on the ClouT solution, and its market specificities. The involvement also in the identification of business models for the FESTIVAL project, provides her further experience in a domain where there is a strong involvement of government actors	Female

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

- L.Marasso, V. Moretto "Come finanziare le città del future", Maggioli Editore, November 2015
- G. Aiello, M. Alessi, L. Marasso, E.Zimeo, "Co-creation of user centric Public Services for Open Governance", I-CiTies 2015 - CINI Annual Workshop on ICT for Smart Cities & Communities. October 2015
- G Aiello, G. Canfora, E. Zimeo, "Citizen-driven smart-government: a personal dashboard for using web services and open data", I-CiTies 2015 - CINI Annual Workshop on ICT for Smart Cities & Communities. October 2015
- P. Andriani, L. Briguglio, L. Lombardo, M. Nigrelli, D. Pellegrino, J. Sanchez Torres, A. Voulkidis, "FIWARE Generic Enablers as Building Blocks of a Marketplace for Energy", eChallenges e2015, November 2015
- G. Aiello, R. Di Bernardo, M. Maggio, D. Di Bona, G. Lo Re, "Inferring Business Rules from Natural Language expressions", In: Proceeding of 7th IEEE International Conference on Service Oriented Computing & Applications (SOCA 2014), Japan, November 2014

RELEVANT PREVIOUS PROJECTS.

- WeLive (http://www.welive.eu) is a H2020-INSO-1-2014 project funded by the EU. The project is conceived to transform the current approach towards e-government by providing a new open model oriented towards the design, production and deployment of public services based in the collaboration of a quadruple helix, i.e. research organizations, companies, public administrations and citizens. WeLive will provide a novel We-Government ecosystem of tools (Live) built on the Open Data, Open Services and Open Innovation paradigms that is easily deployable in different public administrations and which promotes co-innovation and co-creation of personalized public services through public-private partnership and the empowerment of all the stakeholders to actively take part in the value-chain of a municipality or a territory.
- MyOpenGov (http://myopengov.eng.it) is an Italian research project (POR CAMPANIA FESR 2007/2013 - O.O. 2.1 and 2.2) that realized an integrated set of services and tools that allows both Public Administrations and citizens: a)to closely collaborate through co-definition and implementation of ideas, in order to improve the quality of Public services and the wellfare of a territory;b) to break down the silos in Public Administrations by enabling their collaboration and technological services interoperability;c) to valorize open data stored in different and heterogeneous Open Data Management Systems through their federation; d) to enable non expert users (e.g. citizens) to create personalized public services.
- CLIPS (www.clips-project.eu) is a project co-financed by the European Commission within the CIP-IST-PSP. The main idea of CLIPS is to provide the community with a methodology and a toolkit which allow civil servants and external stakeholders (both citizens and companies) to co-operate in conceiving and developing new cloud-based services, starting from a set of basic micro-services already available in the "cloud". ENG coordinates the project, represents the main cloud facility provider and play the role of system integrator.

PARTNER N. 15: M3S SRL, Italy

DESCRIPTION OF THE ORGANIZATION

M3S is a spin-off company created in 2005 by researchers of the Universities of Genoa and Padua and by Marconi Communications (now part of the Ericsson Group) and currently completely autonomous. M3S aggregates experts in the Information and Communication Technology coming both from academic research institutions and from industry in order to develop and market innovative platforms and services in the field of: i) Java Technology and Platforms for Service Development, Execution and Management, ii) Next Generation Networks, embedded software development, passive traffic monitoring and network management.

M3S will contribute to the UNALAB project its expertise in data management and interchange and with the development of innovative services for data mining, processing and distribution.

Technologies and Reference Domains

- Technologies
- Software Development
- C e Java, Open Source Technology and Frameworks
- C#, Microsoft Technology and Frameworks
- System and Network Management
- Session Border Control and Network Monitoring
- Virtualization and Cloud Computing
- Software Defined networks and OSS systems
- Reference Domains
- Internet of Things (IoT)
- Service Composition (Mashup)
- Mobile and fixed access networks management

M3s has developed the following tools and software platforms:

- Private Data Center directly operated which hosts among others the services for the Port Management
- Service orchestration platform developed within the OPUCE (IP - VI FP) and iCore (IP – VII FP) European Programme. The platform supports the development and the execution of composite services based on the coordinate action of a set of atomic services over an event based workflow model.
- Data Mashup platform for distributed spreadsheet composition. One of the most original functionalities provided by the platform is that of guaranteeing the propagation of values along chains of linked spreadsheets even when some of such spreadsheets are off-line.
- Platform for document management and workflow management in the public administration domain. The platforms have been developed using JEE technologies over a PAAS (Platform As A Service) provisioning model.
- Passive Network monitoring platform supporting network fault detection as well as the measurement of network Key Performance Indicators (KPI) and Service Level Agreement the validation.

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Prof. Dr. Pierpaolo Baglietto: Dr. Baglietto was born in Varazze (Savona, Italy) in 1963. He received a Master Degree in Electrical Engineering (1990) and a Research Doctorate in Computer Engineering (1994) from the University of Genova. He was a visiting researcher at MasPar Computre Corp. (Sunnivale CA, USA) in 1991 and at the Communication Sciences Labs. of Nippon Telegraph and Telephone Inc (Kyoto, Japan) nel 1992.Dr. Baglietto joined the University of Genova in 1996 as Researcher and since 2003 he is Associate Professor at the Department of Computer Engineering (DIBRIS) at the same University.Dr. Baglietto is a	Male

member of the Scientific and Technical Committee for Certification of Information Security Management Systems at RINA Service SpA.Since 2013, Dr. Baglietto is Director of the Joint Research Center on Computer Platform Engineering, which includes the University of Genova and the University of Padova.Dr. Baglietto is co-founder and Scientific Advisor of M3S.	
Prof. Dr. Massimo Maresca: Dr. Maresca was born in Genova (Italy) in 1956. He received a Master Degree in Electrical Engineering (1980) and a Research Doctorate in Computer Engineering (1985) from the University of Genova. He was a Post-Doc. at the IBM T. J. Watson Research Center, Yorktown Heights (1985-1987), and later at the International Computer Science Institute, Berkeley, California (1991-1993). he took a tenure track position as an Assistant Professor and later a tenured position as an Associate Professor at the University of Genova (1990-1994). In 1994, he moved to the University of Padova as a Professor (1994-2013). In 2013, he moved back to the University of Genoa, where since 2013 he has been a Professor of Computer Engineering. Currently he is on leave from the University of Genova and leads the Scientific Office of the Consulate General of Italy in San Francisco. In addition, he is also a Visiting Scholar at University of California Berkeley.While at the University of Padova, Dr. Maresca took a temporary government position, on leave from the university, in the staff of the President of the Italian Authority on Informatics in Public Administration (AIPA) as a Technical Counselor.In 2004, Dr. Maresca founded the Joint Research Center on Computer Platform Engineering, which includes the University of Genova and the University of Padova, and was the Director of such a center for about ten years, up to 2013. Dr. Maresca is co-founder and Scientific Advisor of M3S.	Male

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

- M. Maresca, The Spreadsheet Space, to appear on IEEE Computer.
- M. Stecca, C. Moiso, M. Fornasa, P. Baglietto, M. Maresca, A Platform for Smart Object Virtualization and Composition, IEEE Internet of Things Journal, Vol. 2, N. 6, Dec. 2015, pp. 604-613.
- M. Stecca, M. Fornasa, M. Maresca, P. Baglietto, Experiments and Analysis on Hypervisor-Based Fault Tolerance in Virtualized Cloud Environments, Praxis der Informationsverarbeitung und Kommunikation 35(3): 161-166 (2012)
- P. Baglietto, M. Maresca, A. Parodi and N. Zingirian, Stepwise deployment methodology of a service oriented architecture for business communities, Information and Software Technology, Vol. 47, No. 6, pp. 427-436, Apr. 2005, Elsevier.
- System for the Interaction Among Spreadsheets Over Networks, Italian Patent N. 0001415210 Patent, US Patent PA6578US pending.

RELEVANT PREVIOUS PROJECTS.

- iCore, Internet Connected Objects for Reconfigurable Ecosystems, contract 287708, VII EU FP.
- OPUCE, Open Platform for User-centric service Creation and Execution, contract 034101, VI EU FP.
- SPICE, Service Platform for Innovative Communication Environment, contract: 027617, VI EU FP.

PARTNER N. 16: Ramboll, Finland

DESCRIPTION OF THE ORGANISATION

Ramboll Gruppen A/S is a leading engineering, design and consultancy company with 13,000 experts worldwide. Ramboll operates across the markets: Buildings, Transport, Planning & Urban Design, Water, Environment & Health, Energy, Oil & Gas and Management Consulting. Ramboll has helped develop some of the largest cities in the world – incl. London, Berlin, Singapore and Beijing. A global team of Ramboll experts provides services to the City of San Francisco through a framework contract for strategic planning, sustainable planning and resiliency planning. Also, we have long-term partnerships with the largest Nordic cities and have played a key role in making them into world-leading sustainable and liveable cities, as evidenced by the Green City Index (which has Copenhagen, Oslo and Stockholm as the top three cities).

Ramboll Finland Oy is a wholly owned subsidiary of the global Ramboll Gruppen A/S. In Finland Ramboll's water experts address global water and climate challenges by working across the water cycle from water resources and supply, processing and treatment, to sewerage and discharge. Working with municipalities, utilities, and industrial clients we draw on multidisciplinary expertise to create innovative, sustainable and liveable solutions for our customers and society. Our customers include water and wastewater utilities, governments, local and regional authorities, developers and construction companies, as well as industrial companies and international political and financial institutions such as the European Commission, the Asian Development Bank and the World Bank. One of Ramboll Finland's biggest offices is located in Tampere where we cooperate closely with the city of Tampere.

Ramboll's experts contribute to WP5, "Demonstration, Climate and Water Resilient Urban Living Labs.

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Director Maarit Vuorela (M.Sc. city sociology): Mrs. Maarit Vuorela is the director of Ramboll Management Consulting in Finland. She is specialised in developing smart cities within networks together with public and private sectors and third parties. Maarit has been the responsible project leader in multidisciplinary city development projects focused on creating innovative ideas together with different interest groups. Several of her projects relate to enhancing growth and liveability. Maarit has been consulting Tekes, the Finnish Funding Agency for Innovations, for several years now in Smart City solutions and in this work she has an active role in leading Tekes networks and focus groups nationally and internationally. Maarit has been working on the seaside area Smart&Clean vision and program with Nature Based Solutions in Östersundom area in Helsinki. The NB solutions for the area were created together with public and private sector partners, also including the inhabitants of the area. Additionally Maarit is part of Ramboll's global team proving services to the City of San Francisco through a framework contract in strategic planning, sustainable planning and resiliency planning.	Female
Senior Consultant Henri Lahtinen (M.Sc. Regional Studies): Mr. Henri Lahtinen has graduated from the University of Tampere and currently lives in the city. He is an experienced project manager and coordinator in large international projects. He manages several projects for the city of Tampere, including a study of crowdfunding as a tool for participatory and innovative urban development. Henri also recently led a project for the city of Tampere in which solutions were searched for improved service processed regarding urban planning.	Male
Head of Unit Jouni Lehtomaa M.Sc (Eng): Mr Lehtomaa has long history in the planning and implementation of demanding projects in Tampere region. He was part of the team that won 1st price with a revolutionary plan/design for Tampere's new train station and the surrounding region. He also has wide ranging experience in transport and urban planning solutions. He has for instance led the development of novel and innovative new approach which aims to bring access to an international airport from every major Finnish city. Jouni's ability to think outside the box adds value to Ramboll's team.	Male
Project Manager Päivi Paavilainen, M.Sc (Eng). M.Sc (Eng). Ms. Paavilainen has graduated from Tampere University of Technology and has lived, studied and worked in the city for almost 20 years. She has over 10 years of work experience in stormwater, drainage and surface water related planning, and during her career she has gained extensive expertise in urban flood risk management and planning of flood alleviation measures, in both masterplan and construction planning level. She has also carried out numerous other hydrological assessments and studies, such as stormwater quality management planning, discharge and flood level studies, urban stream remediation plans etc. She is experienced with several hydrological networks modelling and simulation programs such as DHI Mike Urban, Mike Flood and HEC-RAS. Several of her project cases are located in city of Tampere and make use of nature based solutions and ecosystem services as means of managing and treatment of drainage waters. Along with many other experts, she is part of Ramboll's global team proving services to the City of San Francisco through a framework contract in strategic planning, sustainable planning and resiliency planning.	Female
Team Leader Kaisa Mustajärvi (PhD in Biodiversity). Mrs. Mustajärvi has over 15 years of experience in environmental management, consultancy and research in conservation ecology and ecological planning. Her research also covers the effects of climate change to dynamics of nutrient and carbon flows through the ecosystem. As she has worked as a senior scientist in a EU wide monitoring program focused on the effects of air pollution and climate change effects. She thus has a sound understanding about the effects of the climate change brings to the flow of nutrients and water in the ecosystem. Her recent work in Ramboll has focused on implementing ecosystem services and ecosystem approach to landscape planning and land use planning. Her recent assignments include e.g. determining the ecological networks for county planning, ecosystem services assessments for county planning, ecological surveys and advisory for community and planning. She has work as an ecology advisor in several stormwater plans. She currently works in a team within Ramboll to create a new approach based in ecosystem services approach to implement, monitor and assess livability within urban planning.	Female

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

- Water Management Decision Support Tool - Integrating hydrological modelling with GIS multi-criteria analysis
  - Ramboll Environ has developed a new tool which provides an effective holistic approach for the design and placing of various types of water projects. The new tool integrates a GIS-based multi-criteria analysis with hydrological modelling, providing a systematic and flexible approach in assessing the best options for the utilization and management of water resources. The tool is used to evaluate the technical, social, economic and environmental factors that can influence the design and execution of a particular project. The tool can be applied to a wide range of water projects, from optimal design of aquifer storage and recovery systems to determining the best sites for rainwater infiltration in climate adaptation projects.
- Ramboll's approach to creating urban nature
  - Ramboll acknowledges that a holistic approach to urban development is needed in the world where cities are expanding while the area for nature is gradually being reduced. To stop the decline of biodiversity it is necessary to involve nature in the development of our society, not least in the cities. By integrating nature into our society, we are not only giving more physical space to wild species, we are also achieving multiple benefits for people, our society and the environment. We at Ramboll believe that by taking a more holistic approach and incorporating a biological understanding into the way we plan urban environments, the chance is positive for the good ambitions about sustainable cities to become a reality.

RELEVANT PREVIOUS /ON-GOING PROJECTS.

- Cloudburst Resiliency Planning Study, New York City, USA, 2016-2017 (ongoing)
  - The project is designed to develop the guidelines for a city-wide cloudburst plan in New York City. Ramboll will bring its experience from Copenhagen, Denmark where we have successfully studied and developed Cloudburst Adaptation approaches. The goal of the project is to pilot approaches in a specific area that can be incorporated into planning, redevelopment and stormwater management approaches in other areas of the City. As an important part of the project, Ramboll will facilitate multi-disciplinary workshops with stakeholders from the city's agencies to engage them in the process, create ownership and enhance stakeholders insight in international resiliency planning and design of green infrastructure with focus on creating synergies with other planning and implementation projects.
- Sulkavuori Central Sewage Treatment Plant, Tampere, Finland, 2016 (ongoing)
  - Ramboll is actively involved in a central sewage treatment works project in Sulkavuori region in Tampere, Finland. The treatment plant will be built in the bedrock which makes it a reliable and environmentally friendly option and also for the most part hidden from the view. The planned facility is described as the most important environmental investment in Tampere region. The new Sulkavuori waste water treatment facility will replace currently used Viinikanlahti and Rahola sewage treatment plants, built during the 1960s and 1970s, as well as the Lempäälä sewage treatment plant. Ramboll is responsible for reviewing the general planning as well as planning of implementation of the bedrock treatment plant and sludge treatment plant and discharge lines of the plant. In addition to technical planning, Ramboll will also contribute to risk management of the complex project as well as planning of interaction with people living in the area and users of the facility. Ramboll's work will be conducted in 2016.
- Stormwater management masterplans and detailed plans for Lakari Industrial Estate, Rauma, Finland, 2015-2016
  - The project consists of stormwater management masterplan for the new Lakari 1+2 industrial estates and detailed plans for the stormwater retention structures in Lakari 2 industrial estate. Stormwater effluent quality and risk management is crucial, because the drainage is discharged into a canal, which transports local river water to be used in production of drinking water for City of Rauma and process water for the United Paper Mills in Rauma.
- Risk acceptance criteria for surface water flooding, Miljødirektoratet, Norway, 2014-2015
  - The Norwegian government has appointed a stormwater committee to study the impact of increased stormwater volumes in cities and towns. The committee will review the current legislative and regulatory framework for municipal management of surface water and make suggestions for changes and improvements. The committee asks for an assessment of risk acceptance criteria for surface water flooding and design rainfall for stormwater facilities. Risk acceptance criteria must be applied across sectors and different types of stormwater facilities.

Ramboll performed a survey of risk acceptance criteria and design rainfall for surface water facilities both in Norway and in Denmark, Sweden, Finland, Germany and England.

- Rainwater infrastructure adaptation (RISA), Hamburg, Germany, 2011-2012
  - The RISA project aims at developing climate adaptation responses for urban water to avoid flooding of basements, streets and properties as well as water pollution from combined sewer overflow and urban / street run-off. The project focuses on the identification of technological requirements and the creation of conditions that enable a forward-looking and sustainable rainwater management. The main objective is to maintain drainage while providing increased projection against surface flooding

DESCRIPTION OF ANY SIGNIFICANT INFRASTRUCTURE AND/OR ANY MAJOR ITEMS OF TECHNICAL EQUIPMENT RELEVANT TO THE PROPOSED WORK.

- Ramboll has the biggest environmental laboratory in Finland, in the city of Lahti. The laboratory is also the leading facility in the fields of microbiology, water chemistry, elementary analysis and gas and liquid chromatography. The laboratory boasts of almost 100 years of experience in environmental analyses and measurement services. The water related services of the laboratory include drinking and household water, ground and surface water, swimming water, purified and dialysis waters, waste water and process water.

PARTNER N. 17: INNOHUB, THE NETHERLANDS

DESCRIPTION OF THE ORGANIZATION

InnoHub is a global network of people, organized to help early start-ups with hands-on support as well as funds. As we will only accept ideas which we believe in as team, we are passionate to turn your idea into a success.

Our core, Tune, consists of seniors which collectively bring hands-on experience in business development, industry standards, alliances, product development, operations, design, research, and integral project management. This team collectively judges the ideas coming in. Additionally, we have a large global network across regions, Europe, USA, China, South-East Asia.

Our core competence allows us to easily do due diligence on ideas and take any hurdles, to come up to a ready to market solution. In such an incubation process, we increase the success rate and focus on the valuation to the market. Our value is to transform gross ideas into nett profit.

OpenRemote is an open source project, started in 2009, with the ambition to overcome the challenges of integration between many different protocols and solutions available for home automation, and offer automation and visualization tools. Since then, the challenge has only become bigger and expanded beyond home automation into several other application domains, specifically related to 'smart cities'. OpenRemote is the tradename of InnoHub in the Netherlands.

OpenRemote Inc. was created, to enable the sponsorship of the OpenRemote open source project – in the vein of JBoss. We developed a complete IoT middleware software stack, and follow a Professional Open Source methodology. It means that top contributors usually end up participating in the company, first as contributors, then as consultant as business develops, then as full time employees and owners. OpenRemote has an independent European organization, in the Netherlands which will join the consortium.

One of the key activity areas of OpenRemote is Smart Cities. Whether it is asset management, crowd management, wayfinding, watermanagment, or adapting lighting, OpenRemote can assist in implementing complete middleware solutions and take responsibility for both implementation as well as servicing and hosting of open source solutions (both on premise or cloud hosting).

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Pierre Kil brings experience in new business development with an expertise in smart city applications, having a deep understanding of typical applications and challenges to create effective solutions. Additionally, he brings along wide expertise in consumer and application, developing viable business models and project management. Pierre is currently CEO of OpenRemote. Before joining OpenRemote, Pierre has been responsible for several R&D organizations within Philips in Europe, Asia and US. Most recent he was General Manager of the Global Venture portfolio and Application Department within Philips Lighting.	Male
Don Willems is a UX expert with extensive experience in creating effective and intuitive user scenario's, transalting these in workflow, UX, and UI functionality for projects. He has been involved in most reference projects, both driving UX and a project management role. Don graduated as Master of Industrial Design at the Eindhoven University of Technology.	Male
Christian Bauer is a senior software system architect, responsible for the technical architecture of the OpenRemote 3.0 platform. Christian is technical lead in large OEM implementations of OpenRemote software. Previously Christian Founded Hibernate, which was acquired by JBoss, which again was required by RedHat. Within RedHat he was the project lead for the Hibernate product portfolio.	Male
Richard Turner is Software Developer with a broad experience in front end development with experience in hybrid app development, Android, iOS, as well as HTML5/CSS/JS. Richard has been the lead in most of the reference projects for Smart City applications.	Male
Michal Rutka is an expert in data mining and self-learning algorithms, based on drools. With a background in stock trading analysis software, Michal has developed broad experience in different rules based programming tools to create algorithms for analysis large data sets. He has experience both in the technical software tools as well as the pragmatic translation of meaningful use cases in relevant self-learning mechanisms or data filters.	Male

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

- Review MIT Technology review OpenRemote was featured in a review by MIT Technology Review a couple of years ago: 'Free Software Ties The Internet of Things Together (2013)'
- OpenRemote Community Website and Forums: www.openremote.org. OpenRemote has over 40,000 active subscribers on their free software tool Designer 2 www.designer.openremote.com
- OpenRemote Professional offering and Smart City references: www.openremote.com
- Prizes: OpenRemote has won several IoT prizes, Including Infoworld Technology of the Year awards in 2012, 2013, 2014 and Winner at The IoT World Conference in San Francisco 2015

RELEVANT PREVIOUS PROJECTS.

- Waterway Safety, Beatrix canal. Waterways around Eindhoven are monitored to improve safety for all users being freightships, pleasure boats and canoes. Ships are tracked via AIS or GPS tracking on smartphones. In addition, based on geo-fencing and several sensors, users are contacted to warn them for hazardous or relevant situations. This can range from temporary warnings related to events or construction works, warnings in case water levels are too high to pass certain bridges, or waterflows have surpassed a critical limit. In addition, users can register issues and pay harbour tax. A management dashboard is available for the area manager, while mobile apps, and touchpanels at marina and canoe club are available for waterway users.
  This project is involved in close collaboration with all stakeholders: municipality, area manager, skippers, pleasure boat users, and canoe club. (see video)
- Crowd Management, Stratumseind Eindhoven. Stratumseind is a bar area within Eindhoven with over 50 bars in a single street. Specifically, in weekends there is an increased level of security risks. Police, crowd managers and the City of Eindhoven have installed multiple sensors with the objective to observe potential harmful ahead of time, allowing crowd managers to prevent problems. Additional effect is an increased level of perceived atmosphere by the visitors leading to increased visits. OpenRemote has connected all sensors (sound, people counting, video, social media) and made these accessible to the area manager and police, via a management dashboard in the control room. We developed algorithms to detect potential harmful situations. In a addition, a messaging service and mobile

applications enables the alerting of staff, observing the situation and intervening. Staff can observe all relevant data on their mobile device for interpretation and call for assistance or switch light settings locally (see video).

- Water management, Entropia, Brugge OpenRemote developed a concept for measuring sewer flows and levels, enabling water management staff to get notifications in case of required maintenance, or active control of locks to prevent future flooding problems. Project has not been implemented.
- Interactive Lighting, Eindhoven University of Technology. The University has adopted OpenRemote as a platform for staff and students to develop IoT projects. Tools allow for continuous scripting of new sceanrio's, testing them with real users. It's implemented around it's campus (see video)

- Social Alert. OpenRemote is used as the software platform to connect people at risk with their caregivers, friends and family. Through sensors and the ability to program your own rules for notifications, users are increasing peace of mind and interaction and support between users and caregivers. The service is offered via multiple welfare organisations in The Netherlands. (see www.sociale-signalering.nl)

PARTNER N. 18: !IMPULS, THE NETHERLANDS

DESCRIPTION OF THE ORGANIZATION

'!MPULS' gives you Energy', it is the slogan of our organisation. !mpuls urges human to make the Earth significantly more sustainable, by creating 'Enlightened' sustainable projects. We believe that we can encourage human to live and act more environmental friendly by demonstrating them our sustainable nature-based solutions.

IMPULS is a cooperation among Kuijpers (Technical and Sustainable Services), Ballast Nedam (Building Construction), Brink Groep (Management and Consultancy), DWA (Developing Technical and Sustainable Solutions) and DOOR (Architect). We initiate, develop, physically create and maintain/manage sustainable refurbishment of buildings and urban areas, by using environmental friendly sources as much as possible.

!MPULS searches for long term relationships (> 15 years) with parties that have the ambition to create a sustainable and pleasant working and living environment for now and in future. Parties that want to live or work in living-lab areas for the development of innovative and sustainable nature-based solutions.

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Alex Hesling MSc: Director of project 'Sustainable refurbishment of municipal buildings in Eindhoven'. More than 20 years' experience in energy efficient building and urban area refurbishments as among others life cycle costs consultant and as director. He contributed to the sustainable development of the university building, hospital building and cultural heritages in Eindhoven and The Netherlands. Due to his position and his experience and knowledge in energy management, he can make design decisions taking into consideration the costs and environmental impacts associated with all the stages of a product's life from cradle to grave.	Male
Saskia Oranje MSc: Adjunct director of project 'Sustainable refurbishment of municipal buildings in Eindhoven'. Experience as architect and consultant in several urban design and planning projects; She had investigated smart solutions for inner city refurbishments for the national program 'Sustainable refurbishment of the wonderful Dutch densely built cities'. As a member of the Excellence Expert Team, she had developed innovative tools for net-zero energy office building refurbishments. She implemented the smart solutions and innovative tools before in the inner city refurbishments of The Hague and Bloemendaal. For the project 'Sustainable refurbishment of municipal buildings in Eindhoven', she designed a smart working environment and urban living area, that can empathize with future changes in usage of inner cities.	Female
Machiel Karels: Performancce Manager Sustainabilitie KPI's of project 'Sustainable refurbishment of municipal buildings in Eindhoven'. 13 years' experience as consultant and developer of sustainable solutions	Male

in the building environment especially to theme's as Energy, Waste, Water, Green, Healthy and Pollution, BREEAM-expert, Member of the Excellence Expert Team from the Dutch Platform31, formal board member of the Dutch Energy Consultant Group and advisor Sustainable Buildings of the local government agency. Last 5 years he develops town hall, Harderberg, Deventer, Harderwijk as highly sustainable buildings and as 'Enlighted' examples of Green Buildings. He realizes a new and innovative energy system (built on energy exchange by surface water) for old historic buildings in the inner city of Deventer and applied a the Road Map Green & Water in project 'Sustainable refurbishment of municipal buildings in Eindhoven' with also a Blue House Concept on the Stadhuisplein.	

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

In 2014, !MPULS won the competition 'Kantoor vol Energie' (Sustainable Housing Platform), organized by the Ministry for Housing and the Central Government Sector. Therefore !MPULS is named by this Ministry as the 'Excellent Expertteam' to encourage the refurbishments of offices towards net-zero energy buildings. For a period of 2 years, !MPULS has the opportunity to develop an innovative tool to efficiently transit the current office building stock into net-zero energy offices.

RELEVANT PREVIOUS PROJECTS.

In 2014, Eindhoven called to market parties to submit innovative ideas to transit on a smart way towards sustainable municipal buildings and to a green inner city. They received nearly 200 ideas and profiles from interested parties to transform the city to a green energy-neutral city by 2045. !MPULS is selected by Eindhoven to elaborate their innovative idea for the next 15-30 years. !MPULS aims to create an environmental friendly and high quality 'green' inner city among others with the following solutions:

- At public areas, replace asphalt, concrete and stones for grass, trees or shrubs
- Create green facades and roofs on the municipal buildings
- Equip buildings and public areas with nesting areas for vulnerable species
- Create facilitations at buildings and public areas for stimulation of biodiversity in the inner city
- Create green at strategic places in the inner city to emphasize the presence of green and water in the inner city
- Apply three Blue House concepts in the city
- Recreate the 'Gender' river
- Purify waste water coming from buildings using a 'green terrace' before it will be drained to surroundings surface waters
- Realisation of a water buffer installation to manage the water level in the inner city

PARTNER N. 19: DAPP- D'APPOLONIA SPA, ITALY

DESCRIPTION OF THE ORGANIZATION

D'Appolonia S.p.A., part of the RINA Group, is the largest fully independent Italian firm providing consulting & engineering services to Clients belonging both to the public and the private sector. The company operates in the markets of Energy, Transport and Infrastructures, Industry and Investor Support. With a staff of about 1000 engineers, scientists and associated professionals located in 20 offices worldwide, D'Appolonia offers high-end services to investors, promoters, operators and contractors, as well as to insurers and public administrations, to support their initiatives. All D'Appolonia services are performed at the highest professional level, understanding and complying with Client's needs and requirements while taking into due consideration sustainability and health, safety and environmental targets.

D'Appolonia is a team of engineers, consultants, designers, planners and specialists supporting public and private Clients from concept to decommissioning, through consultancy, design, management, operation and maintenance. The company provides a wide range of services covering the whole project life cycle from feasibility and specialized technical studies to conceptual and detailed design, prototyping and testing, project management, site engineering as well as operation and maintenance

management. Innovation is a key element in all our projects; D'Appolonia has over twenty years' experience in helping its clients in developing their new products and services as well as managing their collaborative innovation processes.

Role in the proposal: Replication and upscaling activities and related workshops for follower cities (WP7 leadership); exploitation and business models and technology transfer workshop (tasks leaders in WP8), contributions to WP3 (monitoring and evaluation) and WP6 (support in tender preparation and evaluation).

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Margherita Scotto: graduated in civil engineering at the University of Genova in 2006. She joined D'Appolonia Sp.A. in 2006. She is actively involved in European projects and national initiatives addressed to the application of innovative technologies, methodologies and business models for energy efficiency retrofitting in the built environment. She is currently involved in the ongoing FP7 CSA initiative (namely EEb CA2) aimed at mapping in a georeferenced tool the most relevant innovative solutions the energy efficient for buildings domain developed in previous R&I co-funded projects. The most recent EC projects she has been involved in are: R2Cities, Fasudir, EFFESUS, GE20, E3Soho, OPEN HOUSE.	Female
Elisa Massa: holds a Bachelor degree in Civil Environmental engineering with a specialization in water and soil protection solutions and has 9 years of professional experience in water and waste water a sector. She works in D'Appolonia S.p.A. since 2007 and during her carrier she has participated in many projects related to flood risk reduction works in watersheds, storm water drainage, water supply, sewerage networks and remediation of domestic wastewater. Among the principal projects: the detailed design of hydraulic infrastructure within the requalification of the railway station area of the city of Parma (Italy), the technical coordination and the hydraulic design of the area called "ex Mercato Navile, Bologna (Italy)". She took part to the project team within the development of the "Feasibility Study of the water and wastewater infrastructure in Sarajevo" (Bosnia) and the project "Sisak Wastewater Management Project - Financial and Operational Performance Improvement Programme and Implementation Support".	Female
Lorenzo Facco: is an Environmental Engineer with 13 years of experience in the project management, and is now Business Development Manager of the Resource Efficiency and Sustainability Business Line of D'Appolonia. His experiences cover the fields of resource efficiency and sustainable energy, climate change, environmental management and environmental impact assessment in developed and developing countries with specific focus on policies definition and implementation including green and blue growth strategies in Europe, ENPI South Countries, China and Western Africa where he is currently appointed as Deputy Project Director in a project funded by EIB focusing on climate change adaptation and mitigation. He is moreover participating as expert to the ENPI Clima South project funded by EU and aimed at Supporting Climate Change mitigation and adaptation in the ENPI South region. During the last years Facco worked with DG ENERGY of the EC for the definition of a RoadMap for the Algae Bioenergy Siting, Commercial Deployment and Development Analysis and coordinated the LCA based analysis of the most promising climate friendly technologies within an EU DG CLIMA assignment.	Male
Tanya Scalia: MEng, she is Certified Six Sigma Green Belt and active in technology transfer and product and strategic roadmapping activity in different sectors. She has been working on ESA technology transfer programme since 2006. Ms Scalia is currently Technical Leader of the Group "Technology Exploitation and Business Assessment" and was highly involved in exploitation and roadmapping activities in European projects (Building Up, NANOfutures CSA and Value4Nano CSA) and tenders (RocKETs, KET for Dual, Automotive for Space).	Female
Elenia Duce: PhD, joined D'Appolonia in 2009 as Senior Engineer in the Innovation Consulting Division and she is currently working on activities related to the development of market analysis and business modelling, for the benefit of several industrial customers, enabling the identification of the most suitable performances for market approach and products roll-out. She participated in several EU-funded projects, focusing on IPR management, exploitation and business modelling activities.	Female

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

- The abstract "EMERGENCY MANAGEMENT AND RISK MITIGATION IN RIO CARPI BASIN (Montoggio – Genoa, Italy)" – Massa, E., Pedone, R., Sciutto, M. - was selected for poster exhibition at INTERPRA Event 2016, Lucerne) – related to the project mentioned below "HYDRAULIC ARRANGEMENT OF RIO CARPI BASIN".
- Cross-ETP Research and Innovation Roadmap for the Energy Efficiency in Building 2012 Cioffi M. et al. Steinbeiss-Edition, Stuttgart, ISBN 978-3-943356-37-3.

RELEVANT PREVIOUS PROJECTS.

- Hydraulic Arrangement of Rio Carpi Basin (Montoggio – Genoa, Italy)
  Client: Regione Liguria – Italy.
  After the weather event of 9th – 10th October 2014, with exceptional rainfall intensity up to 135 mm/h which affected the central part of Ligurian chain, in response to Regione Liguria's call for donations to face the emergency D'Appolonia S.p.A. carried out for free a project study of solutions for the hydraulic arrangement of Rio Carpi stream in Montoggio, a small village in Genoa's up-country where the effects were particularly devastating: the final stretch of the stream, a small left-bank tributary of Torrente Scrivia, flooded upstream of a culvert at the entrance of the village centre, due not only to the insufficiency of the existing culvert but also to a widespread debris flow (CNR - Consiglio Nazionale Ricerche - evaluated that during the event approximately 12.200 m3 of debris were mobilized). The design combined traditional techniques (enlargement of the existing culvert, improvement of the existing weir system, retaining walls etc.) with "green" solutions for the stabilization of landslides and debris slopes (reprofiling and planting, arrangement of the water drainage system, protection of river banks with natural slopes).
- Hydraulic Risk Evaluation and Invariance Assessment within the new "Quartiere Città della Scienza" in Rome, Italy
  Client: Cdp Investimenti Sgr S.p.A. - Rome, Italy.
  D'Appolonia S p.A. has been involved in the preliminary design for the requalification of the "Quartiere Flaminio" in Rome. The area is located near the river Tevere and it is classified in the map "Assetto Idraulico – Fasce Fluviali e Zone a Rischio" of the "Piano di Bacino del Fiume Tevere - Piano Stralcio per il tratto metropolitano del Fiume Tevere da Castel Giubileo alla foce P.S.5", as high level risk area. As part of the activities performed within the project, D'Appolonia has taken care of the preliminary hydraulic risk assessments and the hydraulic compatibility of the new intervention in the urban context. D'Appolonia has proceeded with the evaluation of storage volumes in the site in the conditions ante and post-works, assuming a 200 - year flood, according to the mappings currently in force. In order to assess the hydraulic compatibility of the proposed intervention, D'Appolonia has verified that the new buildings, provided by the project scenario, would not result in an increased risk in the area compared to the current state.
  Moreover, D'appolonia has applied in the project the following key principles of sustainable management of stormwater: 1) adoption of permeable paving and laminating systems such as open-air reservoirs ("Noues" or "jardins d'infiltration") and underground tanks in order to contain the outflow of rainwater; 2) recovery and re-use of rainwater for irrigation of the green areas within the intervention site.
  Project Key Staff: Massa E., Sciutto M., Canepa A., Tomarchio A., Farinea C. - September 2015 – ongoing
- SmartEnCity Project – «Towards Smart Zero CO2 Cities across Europe»(FP7-NMP-2010-CSA-4; GA 267024). (H2020-SCC-01-2015; GA 691883). Its main objective is to develop a highly adaptable and replicable systemic approach towards urban transformation into sustainable, smart and resource-efficient urban environments in Europe through the integrated planning and implementation of measures aimed at improving energy efficiency in main consuming sectors in cities, while increasing their supply of renewable energy, and demonstrate its benefits.
  The underlying concept of the proposal is the Smart Zero Carbon City concept, where city carbon footprint and energy demand are kept to a minimum through the use of demand control technologies that save energy and promote raised awareness; energy supply is entirely renewable and clean; and local energy resources are intelligently managed by aware citizens, as well as coordinated public and private stakeholders.
  Additionally, a Smart Cities Network will be setup to support project replication at European scale.
  D'Appolonia's role is to development of the regeneration strategy of the project. Moreover, D'Appolonia supports the follower city of Lecce in the achievement of replication objectives.
- Building Up Project – «Multi-stakeholder, Cross-sectorial, Collaborative long term Research & Innovation Road Map to overcome Technological and Non-technological barriers towards more energy-efficient buildings & districts» (FP7-NMP-2010-CSA-4; GA 267024). The strategic objective of BUILDING UP project was to create an effective coordination of European Technology Platforms and major initiatives whose Strategic Research Agendas and activities address energy efficiency in the built environment to identify and review the needs in terms of long term research and

innovation. D'Appolonia was technical coordinator of the project, leading the roadmapping process and related workshops and reports.

- GE20 Project – «Geo-clustering to deploy the potential of Energy efficient Buildings across EU» (FP7-2011-NMP-ENV-ENERGY-ICT-EeB; GA 285501) – GE2O project aimed at developing a proof of concept of geo-cluster approach by means of a geo-cluster mapping tool. The mapping tool, basing on similarities across Europe, provided the following relevant information about:
  where and how a product/system/service/programme can be implemented or applied;
  which product/system/service can be used in a specific situation;
  where are opportunities to develop a new product/system/service/programme.

PARTNER N. 20: IRE - Infrastrutture Recupero Energia Agenzia Regionale Ligure, Italy
(IRE – Regional Agency for Infrastructures, Urban Regeneration and Energy for Liguria)

DESCRIPTION OF THE ORGANIZATION

IRE is a joint-stock company established in 2014 by Liguria Region by merging three regional companies. Aim of the company is urban and infrastructures development in the Region and the implementation of energy policies. Tasks of the company are feasibility studies, tendering procedures, public works management, support to public entities (region and municipalities), implementation of innovation projects, elaboration and management of urban planning projects and of inclusive urban regeneration projects, environmental remediation, social housing retrofitting, support to the Region in the management of ERDF related calls, EU funds research. IRE has a vast experience in the elaboration and management of EU projects, also on the topic of smart cities and communities.
IRE spa has over 30 employees with technical skills and experience in buildings, urban and infrastructures design and planning, public procurement, management, communication and training.
With its infrastructure development and urban/building renovation skills, IRE supports the regional authority and other local administrations in the following activities: planning and implementation of new infrastructures such as hospitals, roads & biking paths, river banks, etc.; preparation of feasibility studies and projects according to the Region's strategic plan; elaboration of sustainable urban regeneration plans; planning and implementation of requalification, regeneration and restoration actions in urban centres, also through citizen engagement and with a specific attention to social inclusion; integrated planning; smart city planning. IRE also has expertise in restoring the hydraulic safety of rivers and creeks in Liguria, in the requalification of public heritage sites and buildings and in the related analysis of adaptive reuse options taking into account economic feasibility. IRE' s team also has vast experience in the restoration of dismissed industrial sites.
IRE's role in the consortium is that of technical partner. Its aim is to support the Municipality of Genova in in-depth technical analyses, in the design and planning of activities to be carried out in the demo area, as well as in the monitoring and in the participatory process (WP5). In addition, IRE will also be engaged in WP6 (exploitation and replication/scaling up), helping the city of Genova in the identification of further potential areas for replication as well as in the promotion of the tested solutions in other areas of Liguria Region.

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Simona Brun, director: Graduated in Engineering, she is the Director of IRE's Infrastructure development and building/urban renovation department. She has a vast experience in complex infrastructure development and in the recovery and conversion of dismissed industrial areas such as the former Ilva area in Genova's suburb of Cornigliano, including all activities related to Cornigliano's new expressway. She has expertise in coordinating and leading demolition actions and environmental restoration actions, in infrastructure and green areas design and in site management and supervision. She is responsible for the activities related to the development of regional infrastructures and is head project manager for the development of the new Hospital of La Spezia.	Female
Flavio Barbieri, senior technical expert: Graduated in Environmental Engineering with a specialisation in the management and conservation of soil, he coordinates IRE's projects in the environmental and	Male

infrastructural fields. He is project manager of all designs related to hydraulics, infrastructural works and activities connected to soil remediation. Among the main projects he worked on there are: hydraulic tunnel between Vernazza creek and Sturla river; reshaping of Ruscarolo creek; waste soil and water remediation in Genova's Ilva steel factory; road tunnel along the Aurelia road in the city of Noli; bike lanes between the cities of Ventimiglia and Genova.	
Teodora Buzzanca, senior technical expert: Graduated in Architecture with a specialisation in urban requalification and building renovation, she coordinates IRE's projects in the field of urban regeneration. She was responsible for the elaboration of the Regeneration Plan of the former Gavoglio Barracks in Genova's Lagaccio district (demo area) and has a vast experience in the elaboration of complex urban plans. She has an expertise in participatory processes related to sustainable urban development and coordinates IRE's civic engagement activities for its urban renewal projects.	Female
Valeria Mangini, intermediate technical expert: Graduated in Architecture with a specialisation in architectural and landscape heritage, she participated in the elaboration of the Regeneration Plan of the former Gavoglio Barracks in Genova's Lagaccio district and of the Requalification plan of the former "Salt Docks" in the Sampierdarena suburb of Genova. In IRE, she works on the elaboration of complex urban plans and on the development of restoration plans in Genova's historical centre. She has an expertise in public procurement and is building site supervisor in the company's urban restoration projects.	Female
Roberta Casapietra, senior expert: Graduated in Political Sciences with a specialisation in local development, she's expert in elaboration and management of EU projects, namely direct funding programmes and Interreg. She prepared the approved ELENA application for the Province of Savona named "PROSPER" and has supported the Province for the startup of the contract. She also prepared for the Region of Liguria the approved Horizon 2020 PDA project named "ENERshift". Expert in technical support to public entities and municipalities, she coordinated the delivery of over 30 SEAPs within the Province of Savona. She worked on the FP7 Smart City project "Transform" supporting the city of Genova, with a focus on the delivery of the online handbook for replication www.transformyourcity.eu Expert in communication, information and energy education strategies.	Female

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

- Regeneration Plan of the former "Gavoglio Barracks" in Genova (public compound) - Regeneration plan of the former "Gavoglio Barracks" (a former military site in the centre of Genova). Activities included: analysis of the context; evaluation of potential requalification and reuse options, in compliance with heritage preservation norms; sustainability assessment (economic, environmental and social); engagement of public and private stakeholders.
- Requalification Plan of the former "Salt Docks" in Genova (public building) - Requalification plan of the former "Salt Docks" in the Sampierdarena suburb of Genova. Activities included: analysis of the context; evaluation of potential requalification and reuse options, in compliance with heritage preservation norms.
- SEAP City of Genova - Elaboration of the SEAP for the city of Genova. Activities included: calculation of the CO2 and energy baseline and elaboration of actions; SEAP monitoring.
- Smart City Interactive Handbook - Design and deployment of the online interactive handbook for replication of the smart city planning methodology developed within the FP7 "TRANSFORM" EU project.
- Regional bicycle path Feasibility Study - Elaboration for Liguria Region of a feasibility study for 85 kms of bike lanes along the ligurian coast, including recovery and conversion of the dismissed railway.

RELEVANT PREVIOUS PROJECTS.

- FP7 EU project "Transform" - Integrated energy-urban planning for smart cities, delivery of the online replication handbook. Amsterdam, Lyon, Copenhagen, Hamburg, Vienna and Genoa were the involved cities. Finalised in 2015.
- Bike lanes - Planning and design of a 2 kms bike lane between the cities of Savona and Albisola, along the scenic coastline of Liguria. 2015.

- Hydraulic tunnel, Vernazza creek - Design of a hydraulic tunnel (length 300 meters) between Vernazza Creek and Sturla River under Genova's Sturla suburb. The tunnel reduces hydraulic risk in the lower part of the highly populated basin. 2015.
- Reshaping of Ruscarolo creek - Design/reshaping of the Ruscarolo creek in the industrial area of Genova's Sestri Ponente suburb for about 1.3 km. Activities included: enlargement of the road alongside the creek to improve pedestrian security with a sidewalk; design of new bridges and lids in compliance with local hydraulic norms. 2015-2016
- "Ex metalli derivati" Arcola - Recovery and conversion of the industrial area "ex metalli derivati" in Arcola, in the Province of La Spezia. Activities included: environmental restoration planning and authorisation procedures; management of buried industrial waste disposal; rain water surface draining system implementation. Ongoing.

PARTNER N. 21: Espaitec, Science And Technology Park Of Universitat Jaume I Of Castellon, Spain

DESCRIPTION OF THE ORGANIZATION

Espaitec is the scientific, technological and business park of Jaume I University in Castellón, Spain. Promoted by the Universitat Jaume I (UJI) and the Castellón Businesspeople's Confederation (CEC), espaitec was set up in 2007 for the purpose of offering quantitative and recognised contribution to both socio-economic development in the province of Castellón and the diversification of its industrial fabric.

Emerges as an initiative based on the intense connection of the Universitat Jaume I in the industrial fabric and the growing demand for support services for enterprise development.

Espaitec aims to create a reference environment in Castellón which hosts, supports, encourages and helps innovative business initiatives to grow, and which facilitates active technology transfer in the University.

To go about this, they are working in a network with the Spanish Association of Science and Technology Parks (APTE), we are an International Association of Scientific Parks (IASP) member, a European Network of Living Labs (ENoLL) member, an Enterprise Europe Network (EEN) collaborator and an important agent in promoting innovation and enterprise in the province of Castellón.

The existence of various structures of technological cooperation reflects the high and increasing activity in collaboration with the industrial and business environment.

Espaitec is one of the main Innovation Global Ecosystem agents in Castellon province establishing all the necessary links with industry and institutions in the territory. Moreover, espaitec has launched recently an international framework "Bridge of Innovation" or e'innobridge that will facilitate the exchange of best practices and inter-collaboration projects among Science & Technology Parks worldwide and their companies (located physically or virtually).

Espaitec is supporting to 65 SMEs (under different level of life cycle) by means of add-value services such as financial resources, networking, project partnerships, fostering knowledge transfer S2B (Science to Business), etc.

Apart from its new infrastructures located in a single enclave based on knowledge, some of the actions it performs are highlighted below:
- supporting talent and entrepreneurship
- accompanying and driving business growth
- specialised innovation support services
- connections with the global innovation system
- offering support and soft landing for internationalisation
- territorial integration

Those actions are conformed under a set of Services (called e'Services) that cover all the main pillars of the espaitec Octogonal Innovation Ecosystem:
• e'Capital Corporate Finance – Support and accompaniment in the search for finance
• e'InnoWatch Technology Matching – Active technology monitoring and trends sensor
• e'Net Global Networking – Connection to the main Innovation Global System nodes
• e'Strategy Smart Business – Support for strategic definitions
• e'Joint Innovation Convoy – All-round solutions through joint ventures with the Park's firm
• e'PMO Project Management Office - Project management advice using PMI
• e'Innobrigde The Bridge of Innovation - Internationalization service , a bridge for technology and innovation transfer.
• e'LivingLab Experimental Innovation - Espaitec's experimental innovation within a 'customer-experience' model

Basically, espaitec is a park which aims to generate wealth, jobs and well-being by creating an economic and business fabric model that goes beyond former models. Nowadays, it houses more than 60 firms and it generates more than 300 highly qualified jobs including its own staff members and those of other parties.

ESPAITEC, since 2007, has been provided to SMEs a great deal of services such as: Supporting R&D, commercialization, establishing public resources,internationalization, Open Innovation, fostering R&D interest from private sector, generating financial mechanism, mentoring network structure, creating culture of collaboration and cooperation among SMEs and Science and Technology Parks.

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Mr. Juan A. Bertolin Title: Chief Innovation & Project Officer Hybridization Manager at espaitec Head of Project Management Office and e'LivingLab Expert in Open Innovation Expert in R&D+i management at Spanish Association of Science & Technology Parks European Network of LivingLabs Council Member IASP Advisory Council Member (International Association of Science Technology Parks and Areas of Innovation)	Male
Mrs. Alicia Pallares Title: Technic European Projects Entrepreneur Expert in Project Management for European scope Expert in Human Resources Management Support to current espaitec's EU projects and preparation of several proposal for INTERREG, H2020 and ERASMUS	Female

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

- Convoy Model: The "Glocal" growth accelerator metaphor, IASP 28th World Conference, Copehaguen, July 2011
- "e'LivingLab: The Science & Technology Parks and Living Labs binomial as innoconnectors for SmartRegions creation", IASP 29th World Conference Tallinn 2012
- STP reshaping the Territories of the Future by means of SmartLands: Urban-Rural Cohesion, IASP 30th World Conference Recife 2013
- Intelligent Territory as Ethic Space: how does Science and Technology Parks play the role of facilitator the Urban-Rural Cohesion, 4th Living Labs Summer School, Research Program, Manchester, 2013
- e'Services, the value of intangible assets non-location oriented, IASP 31th World Conference Doha (Qatar) October, 2014
- e'Innobridge, Competitiveness through inno-connections, IASP 32th World Conference Beijing (China) September, 2015
- Science and Technology Parks as promoters of entrepreneurial universities based on the Triple Helix paradigm, 2016 University-Industry Interaction Conference, Amsterdam, June, 2016

RELEVANT PREVIOUS PROJECTS.

- NetMIB, Erasmus+ 2015-2018 : Network of inter- and multidisciplinary ideation and business model generation programs
- MIND, Erasmus+ 2015-2018 : M.IN.D – Marketing, Internationalization & Development

PARTNER N. 22: -Hlavní město Praha, Czech Republic
(City of Prague)

DESCRIPTION OF THE ORGANIZATION

Prague City Hall is the local and regional government authority for Prague. City of Prague has population of around 1.27 million people. Another 300,000-400,000 people commute to Prague daily for work, study, treatment or tourism. In the administrative borders of Prague counting for 496 km2. Prague concentrates approximately 12% of the Czech population. Prague GDP in 2014 amounted to CZK 1 037 351 mil. CZK. The territory of Prague generates approximately a quarter of the national gross domestic products. Approximately 80% of the total workforce in Prague is employed in the tertiary economic sector, which generates 80% of added value. Major universities and a number of research institutes (2/3 of public research institutions) are to be found in Prague, as well as the majority of businesses active in research and development; Prague is the recipient of 33% of the total national expenditure in research and development.

City Hall will be the main implementation body of the UNaLab Roadmap. It´s budget administrator, investor of city investment projects and public body for land use plan.

Prague City Hall is a signatory to the Mayors Adapt, an initiative of the European Commission's Directorate General Climate Action, launched in the context of the EU Adaptation Strategy and is implemented within the Covenant of Mayors. Twinning city in this initiative is Munich. Prague is preparing the adaptation strategy to climate change and UNaLab project helps with quality preparation of the concrete implementation plan based on real implementation know-how of lighthouse cities.

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

RNDr. Štěpán Kyjovský: is a Head of Environmental Protection Department of the Prague City Hall, this department is responsible for some city investment actions to the green and blue infrastructure and it´s creating city adaptation strategy to climate change for the city of Prague. RNDr. Štěpán Kyjovský is member of working group for sustainable development of regions, municipalities and territories organized by Ministry of Regional Development CZ and he is member of the steering board of the Prague Sustainable Urban Mobility Plan.	Male
Ing. Vojtěch Žabka: is a Project Consultant in the Chief Executive Office of the Prague City Hall. He was Project Manager of Prague team in the project UrbanAdapt, which was focused on nature based solutions for adaptation on climate change in three Czech cities – Prague, Brno and Pilsen. He was also member of the expert team of the Prague Strategic Plan, he worked on Smart City projects Triangulum and Morgenstadt. He prepares project for strategic project management of Prague City Hall.	Male

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

- Innovation voucher - Innovation vouchers in Prague is a project that promotes cooperation with Prague enterprises and scientific research institutions. The aim is to start work active cooperation between the private and public sector innovation
- Pre-Commercial Procurement: PCP in Prague is a project designed to steer the development of solutions towards concrete public sector needs

- Operational programme Prague - Growth Pole of the Czech Republic – OP Prague is based on Smart Cities concept, focused on intervention with high value added and increasing energy efficiency of public buldings
- Prague waste management plan
- Smart Prague website for collection of project ideas.
- UHI Project (Urban Heat Island) – Pilot action plan
- Strategic Plan of Prague – in the Prague strategic plan are integrated nature based solutions for city environmental challenges
- Draft of Prague adaptation Strategy

RELEVANT PREVIOUS PROJECTS.

- Preparation of Prague adaptation strategy to climate change
- Mayors Adapt
- UrbanAdapt: nature based solutions for cities
- Morgenstadt
- UHI: mitigating the effects of the heat island
- Smart Prague
- Triangulum
- Preparation of SUMP
- Integrated Territorial investment of Prague Metropolitan Area

PARTNER N. 23: TU/E – EINDHOVEN UNIVERSITY OF TECHNOLOGY, THE NETHERLANDS

(TU/e Eindhoven University of Technology, Netherlands)

DESCRIPTION OF THE ORGANIZATION

The University of Technology (TU/e) is a research university specializing in engineering science & technology. Education, research and knowledge valorisation contribute to: science for society, science for industry and science for science, by focussing on the Strategic Areas of Energy, Health and Smart Mobility. With advanced quality research, the university contributes to the progress of technical sciences and thus the development of technological innovations. TU/e focusses on areas in which they participate in the international scientific community. TU/e puts emphasis on knowledge valorisation: research results are translated into successful innovations and serve as a basis for creating new products, processes and enterprises.

TU/e Innovation Lab is responsible for the valorisation of the knowledge of the university. One of the ways of doing this is collaborating in projects with external parties, through a.o. LightHouse. LightHouse aims to disclose the knowledge of the university in the field of smart city and smart lighting solutions for society. This is realised by applying the knowledge, methods and designs of a.o. the Smart Cities Centre, the Data Science Centre (DSCe) and the various faculties of the TU/e in concrete projects for external organisations, among which H2020 projects.

The department of the Built Environment is responsible for research and education is the field of Architecture, Urbanism and Building sciences. Scientific research is targeting three overarching topics: Quality of life, Smart Living Environments and Sustainable Transformation. The department's research belongs to the top in its field being assessed 4.3 on a 1-5 scale at the last assessment in 2010. Recently the department established a Smart Cities Centre, coordination Living Lab projects around this topic in the Brainport region with Municipalities and Industrial partners in this area.

TU/e is responsible for the tasks related to the roadmapping process with the Follower Cities (part of WP6), and will facilitate the process and bring in knowledge on nature based solutions. In addition, TU/e will support the city of Eindhoven with technical aspects and monitoring performance through the implementation of ICT platforms.

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Dr. ir Elke den Ouden: has been appointed as TU/e Fellow, to further develop strategic relations between the university and public and private organisations. She has over 20 years of experience in industry and working with cities on innovation in smart cities. As strategic director of LightHouse she developed visions and roadmaps for a.o. energy in the built environment, safe and pleasant urban spaces. She has experience in international co-operation projects e.g. FP7 ENIGMA and H2020 Roadmaps for Energy (R4E) – where she is WP leader for 2 workpackages.	Female
Dr. ir. Rianne Valkenburg: is value producer of LightHouse. She has over 20 years of experience in innovation, both in (scientific and applied) research and business practice. She worked on many innovation project together with municipalities and industry. She developed visions and roadmaps for a.o. smart mobility, safe and pleasant urban spaces. She has experience in international co-operation projects e.g. FP7 ENIGMA and H2020 Roadmaps for Energy (R4E) Rianne Valkenburg is (part time) Professor of Innovation at The Hague University of Applied Sciences.	Female
Professor Bauke de Vries: is chair of the Information Systems Group of the Built Environment department at Eindhoven University of Technology, the Netherlands. Since his PhD entitled 'Communication in the building industry' (1996) he has conducted research in product modelling and process modelling in the field of Architecture Engineering and Construction. He published in academic journal such as Automation in Construction and Artificial Intelligence for Engineering Design, Analysis and Manufacturing. He is the Vice President of Computer Aided Architectural Design Futures (CAAD Futures) foundation and in the editorial board of several journals. More recently he is researching Systems Engineering concepts in relation to BIM technologies, and he is board member of the Smart Cities Centre at the Eindhoven University of Technology.	Male

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

- Valkenburg, R., Den Ouden, E. and Schreurs, M.A. (2016) Designing a Smart Society - From Smart Cities to Smart Societies. Published in *'Open Innovation 2.0. Open Innovation Yearbook 2016*.' Published by the European Commission. June 2016. pp 87-92. (http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=16072)
- Den Ouden, E. and Valkenburg, R. (2016) *Vision Development Roadmaps for Energy.* Research results on WP2 in European funded project Roadmaps for Energy (R4E) (http://www.roadmapsforenergy.eu).
- Glumac, B., Han, Q., Schaefer, W.F. & Krabben, van der, E. Negotiation issues in forming public–private partnerships for brownfield redevelopment: Applying a game theoretical experiment. Land use policy, 47, p. 66-77, 2015.
- Han, Q., Nieuwenhijsen, I., Vries, de, B., Blokhuis, E.G.J. & Schaefer, W.F. Intervention strategy to stimulate energy-saving behavior of local residents. Energy Policy, 52, p. 706-715, 2013.
- Glumac, B., Reuvekamp, S., Han, Q. & Schaefer, W.F. Tenant participation in sustainable renovation projects: using AHP and case studies. Journal of Energy Technologies and Policy, 3(11), p.16-26, 2013.

RELEVANT PREVIOUS PROJECTS.

- H2020 EU project Roadmaps for Energy (R4E): developing vision creation and roadmapping capabilities in 8 European municipalities in co-creation with local stakeholders for the topics Smart Buildings, Smart Mobility and Smart Urban Spaces. (www.roadmapsforenergy.eu). TU/e leader of 3 WP's.
- H2020 EU project TRIANGULUM: demonstration of real smart city solutions in living labs in lighthouse cities and replicating them across follower cities. (www.triangulum-project.eu)
- FP7 EU project ENIGMA: implementing a transnational pre-commercial procurement (PCP) procedure for smart lighting as stepping stone for smart cities. (www.enigma-project.eu). TU/e leader of 1 WP.
- E3 SLIM: sharing knowledge and experiences on Smart Lighting in Metropolitan areas (SLIM) with three cities and 5 industrial partners. (www.tue-lighthouse.nl/E3SLIM.html). TU/e co-ordinator.

- Multiple PhD projects related to the topic of Nature Based Cities, such as: 'Case-Based Reasoning for sustainable Industrial area redevelopment', 'Multi-carrier district energy network models', 'Energy consumption change due to climate change', and 'Mixed land use optimization for transport reduction'.

PARTNER N. 24: UAVR - UNIVERSITY OF AVEIRO , PORTUGAL

DESCRIPTION OF THE ORGANIZATION

The University of Aveiro (UAVR) is a public foundation governed by private law that has as its mission the assistance and development of graduate and postgraduate education, research and cooperation with society (https://www.ua.pt/). Founded in 1973, it quickly acquired a leading role in the university landscape of Portugal – evidenced by the fact that it was recently considered the best Portuguese university in the ranking of the top 400 world universities (Times Higher Education ranking, 2011). The UAVR is a privileged partner of companies and other national and international entities, with which it cooperates in many projects and programs – providing important services as well as developing innovative products and solutions that contribute to the advancement of science and technology.

The Centre for Environmental and Marine Studies (CESAM) is an associated research laboratory of the University of Aveiro (http://www.cesam.ua.pt/index.php?language=eng), whose fundamental mission is to develop research in the coastal and marine environment through integration of the atmosphere, biosphere, hydrosphere, lithosphere and social sphere. It acquired the status of Associate Laboratory in 2005, and has an excellent evaluation by the Portuguese Foundation for Science and Technology (FCT). Since its creation CESAM has grown steadily, encompassing currently members from six departments of the UAVR and from one group of the University of Lisbon – totalling about 400 members, including teachers, researchers, post-doctoral trainees, fellows and graduate students.

The Governance, Competitiveness and Public Policies (GOVCOPP) is a research unit of the University of Aveiro (https://www.ua.pt/govcopp/), that integrates social sciences research developed across the University of Aveiro. Its mission is to produce knowledge that contributes to economic efficiency and good practices in governance across specific territorial contexts. It was created in 2008, integrating researchers from four departments of the University. It has been classified as excellent by the FCT, being one of the top 6 social sciences research units in Portugal. One of its main characteristics is the multidisciplinary and highly experienced research team, that builds on expertise in regional and urban planning, sustainable development, economics, demographics and tourism.

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Dr. Peter Cornelis Roebeling: (responsible UAVR) is Assistant Researcher at the CESAM – Department of Environment & Planning, University of Aveiro (UAVR). He holds a PhD in Social Sciences from Wageningen University (Netherlands; 2003) and a MSc in Agriculture and Natural Environment (Wageningen University, Netherlands; 1995), and has almost 20 years' experience in the area of sustainable development – leading integrated research projects regarding strategic resource use planning and environmental management as well as pathways for adoption of sustainable practices in Europe, Oceania, South-East Asia and Latin America. He has worked at the International Centre for Tropical Agriculture (CGIAR-CIAT; Colombia), the National University (UNA-CINPE; Costa Rica), the Wageningen University and Research Centre (WUR – Social Sciences; Netherlands) and the Commonwealth Scientific and Industrial Research Organization (CSIRO – Ecosystem Sciences; Australia). His environmental-economic research has developed across spatial and temporal scales, levels of complexity, policy instruments and stakeholders, with applications in the field of sustainable land use, climate change, food security and ecosystem services. He successfully established (since 2003) interdisciplinary research teams (~10 fte) and attracted sustained research funding (~0.5 mEuro/yr) as well as collaborations to develop integrated socio- and environmental-economic systems research. His international research impact is evidenced by the publication of 27 journal papers, 4 books, 8 book chapter, 50 conference papers and 38 project reports. He has ample international experience through participation in research projects (19; INTERREG-IVC, FCT, ACIAR, MTSRF and CSIRO), conference organizing (1) and scientific (6) committees, and international conferences (30). Finally, 4 PhD-students (on-	Male

going) and 27 MSc-students (25 completed; 2 on-going) have been (co-) supervised.	
Dr. Filomena Martins: is Associate Professor at the Department of Environment and Planning (UAVR), holding a PhD in Applied Environmental Sciences from the University of Aveiro (Portugal; 1998). She has expertise in coastal zone planning and management, citizenship and public participation, and strategic policy development. Filomena has published 20 journal papers, 4 booklets, 16 book chapter and 62 conference papers. She has national and international experience through participation in R&D projects (43), conference organizing (8) and scientific (15) committees. Finally, Filomena has been supervisor of PhD (8 concluded and 6 on-going) and MSc (27 concluded and 5 on-going) students.	Female
Dr. Fátima Alves: is Assistant Professor at the Department of Environment and Planning (UAVR) and integrated researcher at the CESAM, holding a PhD in Applied Environmental Sciences from the University of Aveiro (Portugal; 2006). Her main fields of expertise are spatial and strategic planning, risk evaluation and management, integrated coastal and marine planning and management, coastal and ocean governance, and public communication and participation processes. She has ample national and international research experience through participation in national (FCT) and international (LIFE ENV; FP7; INTERREG IV; DG-MARE; H2020) research projects, evaluation of research proposals (EU BONUS; UPR-NSGCP; DLR-PT) and consultancy projects (B&S Europe; GIZ GmbH). Fatima has published 25 journal papers, 5 books, 6 book chapters and 60 conference papers, and has been supervisor of Postdoc (1 concluded), PhD (2 concluded and 11 on-going) and MSc (26 concluded) students.	Female
Dr. Teresa Fidélis: is Assistant Professor at the Department of Environment and Planning (UAVR) and integrated researcher at the GOVCOPP, holding a PhD in Applied Environmental Sciences from the University of Aveiro (Portugal; 2000). She has expertise in environmental planning and assessment, and relevant experience in water resources governance at the regional water board level. Teresa has published 21 journal papers, 3 books, 5 book chapter and 40 conference papers. She has national and international experience through participation in research projects (5), conference organizing (8) and scientific (9) committees. Finally, Teresa has been supervisor of PhD (4 concluded and 3 on-going) and MSc (25 concluded and 4 on-going) students.	Female
Dr. Filipe Teles: is Assistant Professor at the Department of Social, Political and Territorial Sciences (UAVR) and integrated researcher at the GOVCOPP, holding a PhD in Political Science. His work deals primarily with issues of local governance, innovation and public policy, and his research interests include urban politics, territorial governance and community engagement. He has published regularly on local and regional government issues in international scientific journals. His most recent publications include a book on Local Governance (Teles, 2016). He has significant international experience through participation in R&D projects, conferences, scientific committees and associations (board member of three scientific organisations). He is currently Pro-rector for regional development at the UAVR.	Male

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

- Albuquerque H., Martins F., Galiza L. (2015) Geographical Information System, Tourism. In: Encyclopedia of Tourism, Springer International Publishing, Switzerland. DOI 10.1007/978-3-319-01669-6_522-1; URL: http://link.springer.com/referenceworkentry/10.1007/978-3-319-01669-6_522-1.
- Albuquerque H.C.C, Martins F.C., Raposo R.M.A., Cardoso L.M.T.G., Pereira P.M.S.B., Dias P. (2016) Construction of a web-based geographical information system – the case of Ria de Aveiro region. Anatolia, 27(1), 71-81.
- Alves F.L., Sousa L.P., Almodovar M., Phillips M.R. (2013). Integrated Coastal Zone Management (ICZM): a review of progress in Portuguese implementation. Regional Environmental Change, 13(5), 1031-1042.
- Alves F.L., Sousa L.P., Esteves T.C., Oliveira E.R., Antunes I.C., Fernandes M.L., Carvalho L., Barroso S., Pereira M. (2014). Trend change(s) in coastal management plans: the integration of short and medium term perspectives in the spatial planning process. Journal of Coastal Research, 70, 437-442.
- Bohnet I.C., Roebeling P.C., Williams K.J., Holzworth D., Van Grieken M.E., Pert P.L., Kroon F.J., Westcott D.A., Brodie J. (2011) Landscapes Toolkit: an integrated modelling framework to assist stakeholders in exploring options for sustainable landscape development. Landscape Ecology, 26, 1179-1198.

RELEVANT PREVIOUS PROJECTS.

- 2015-2018 H2020: AQUACROSS (Knowledge, Assessment, and Management for Aquatic Biodiversity and Ecosystem Services across EU policies) aims to support EU efforts to enhance the resilience and halt the loss of

biodiversity of aquatic ecosystems as well as to ensure the ongoing and future provision of aquatic ecosystem services, through advancing the knowledge base and application of ecosystem-based management as well as developing cost effective measures and integrated management practices. URL: http://aquacross.eu/.

- 2015-2017 Erasmus+: CPiP (Community Participation in Planning) aims to explore the concept, application and teaching of participation in planning activities as to obtain understanding of how communities are able to participate in planning processes that shape how places evolve and how public services are designed and delivered. URL: http://www.cpip-planningwithcommunities.eu/the-project/.
- 2015-2016 EEA-Grants: ClimAdaPT.Local (Municipal Adaptation Strategies to Climate Change) aims to start a continuous process leading to the elaboration of municipal strategies for adaptation to climate change and its integration in municipal planning tools in Portugal, through capacity building, awareness raising and the development of tools/products that enable the formulation and implementation of such strategies. URL: http://climadapt-local.pt/en/.
- 2014-2016 FCG: SEM-AMP (Assessment of Marine Ecosystem Services in Marine Protected Areas) aims to demonstrate the relevance and potential inherent to the designation and extension of Portuguese marine protected areas (MPA) network. URL: http://www.spea.pt/en/study-and-conservation/projects/marine-ecosystem-services/.
- 2013-2015 CIRCLE2: ADAPT-MED (Is current decision making "adapted to internalize adaptation" into policy making?) aims to contribute to European and national efforts for adaptation of coastal zones to climate and global change, by creating a breakthrough on adaptation decision making practices through improved utilization of vulnerability assessments and uncertainty analyses. URL: http://circle-2.wix.com/adapt-med.

PARTNER N. 25: USTUTT – UNIVERSITÄT STUTTGART, GERMANY

(University of Stuttgart)

Universität Stuttgart

DESCRIPTION OF THE ORGANIZATION

The University of Stuttgart is one of the top nine leading technical universities in Germany with a strong focus on engineering sciences. The academic tradition of the University of Stuttgart goes back to its probably most famous graduate student: Gottlieb Daimler, the Inventor of the automobile. The University of Stuttgart has solid experience in EU-funded projects such as TRIANGULUM and SMARTER TOGETHER. USTUTTwill participate in the UNaLab project with two institutes, IAT and ILPOE.

„Institut für Arbeitswissenschaft und Technologiemanagement IAT "(Institute of Human Factors and Technology Management) represents within the University of Stuttgart the fields of technology management and industrial engineering, in particular information and communication technology, organizational design and human resource management. IAT supports companies in identifying relevant technologies and in developing appropriate technological strategies taking into account their competencies, competitive environment and market situation. The Institute plans organizational and technical structures that are future-oriented and meet company requirements as well as human needs. The IAT cooperates closely with Fraunhofer IAO, their researchers have worked together at the interface between university research and industrial application on numerous projects directly for industry clients or as part of publicly funded research projects.

"Institut für Landschaftsplanung und Ökologie ILPOE" (Institute of Landscape Planning and Ecology) at University of Stuttgart fosters and develops strategies for the design of landscapes as living environments. The researchers at the ILPOE investigate the structures and manifestations of landscape, its functions, aesthetics and meaning. They also develop corresponding research methods and planning tools based on a comprehensive understanding of ecology and considering people as an important part of the socio-ecological system. Through this approach to landscape planning ILPOE aims to contribute to the productive interplay between natural ecosystems, technical infrastructure and human living environments. ILPOE follows this approach when contributing to several research projects on water sensitive urban design, on resilient cities and on urban heat stress, and when developing new methods and formats in participative, iterative and model-based design strategies (Geodesign).

The activities of the University of Stuttgart within the UnaLab project will focus on WP5 and WP6 due to its expertise in the fields of implementing nature-based solutions (ILPOE), and its research expertise in the fields of sustainable urban development, governance structures for innovation and strategy development, feeding into the development of the replication framework and its application in the follower cities (IAT).

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

IAT Senior Project Leader Nora Fanderl: (M.Sc., Dipl-Ing.) has gained several degrees in the field of architecture and urban design at the universities of Stuttgart and Hamburg. Her research activities comprise topics of urban participation and co-creation for urban systems design and engineering.	Female
ILPOE Director Prof. Antje Stokman: (Dipl.-Ing), born in 1973, studied Landscape architecture at the University of Hanover and Edinburgh College of Art. In 2000-2005, she teached and worked in research projects at Universities in Hanover, Berlin, Hamburg-Harburg, Beijing and Shanghai. In addition, in 2001-2004 she was project manager at Rainer Schmidt Landschaftsarchitekten in Munich. In 2005 – 2010, she held a junior professorship on "Ecosystems design and management of water catchment areas" at University of Hanover. Since 2010, Prof. Stokman leads the Institute of Landscape Planning and Ecology at University of Stuttgart.	Female

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

- Prominski, M.; Stokman, A., Zeller, S., Stimberg, D., Voermanek, H. (2012): River.Space.Design. Birkhäuser, Basel.
- Stokman, A. (2012): Fiascoes of Chinese Urban Development and Turenscape's Exemplary Alternatives. In: Saunders, B. (Hrsg.): Designed Ecologies. The Landscape Architecture of Kongjian Yu. Birkhäuser, Basel. S. 34-41.
- Stokman, A.; Jörg, J. (2013): Strategic approaches to urban wetlands: Reconciling Nature Conservation, Engineering and Landscape Architecture. In: Landscape Architecture Frontiers Magazine China, S. 44-55.
- Stokman, A. (2013): On Designing Infrastructure Systems as Landscape. In: ETH Zürich (Hrsg.): Topology. Landscript 3, Jovis Publishers, Berlin. S. 285-311.
- Schwarz-v.Raumer, H.-G. & Stokman, A. (2014): Integrating Technology, Science, and Creativity – A Challenge for Collaborative Settings in Geodesign. In: Wissen Hayek, U.; Fricker, P.; Buhmann, E. (Hrsg.): Peer Reviewed Proceedings of Digital Landscape Architecture 2014 at ETH Zürich, 15-27.

RELEVANT PREVIOUS PROJECTS.

- Cities as a changing hydrological System – Steps towards an adaptive Management of Urban Water Balance (SAMUWA). Interdisciplinary research project funded by Federal Ministry of Education and Research. 07/2013 - 07/2016
  http://www.ilpoe.uni-stuttgart.de/forschung/projektuebersicht/samuwa.html
- Transitioning towards Urban Resilience and Sustainability (TURaS). Interdisciplinary research and demonstration project funded by EU, FP7. 10/2011 – 09/2016. (lead of WP7: 'Integrated transition Strategies', contributions to WP2: 'Green infrastructure and to WP3: 'Land use Planning and Creative design') http://www.turas-cities.org/
- Sustainable Water and Wastewater management in urban growth centers coping with climate Change - Concepts for Metropolitan Lima (Peru). Interdisciplinary research project funded by Federal Ministry of Education and Research (Future Megacities Program) 04/2011 - 05/2013.
  http://www.lima-water.de/en/index.html

PARTNER N. 26: BOTNIA LIVING LAB, LULEÅ UNIVERSITY OF TECHNOLOGY, SWEDEN

DESCRIPTION OF THE ORGANIZATION

Botnia Living Lab hosted by Luleå University of Technology focuses on human-centric research, and the development and innovation of new ICT-based services. Botnia started in 2000 and has matured from a test-bed to a real-life laboratory. Today Botnia is a world-leading environment for user-centric research, development and innovation (RDI), instrumented by methods, tools and experts, for interaction with user groups. Botnia Living Lab is an effective member as well as member of the council in the European Network of Living Labs (www.openlivinglabs.eu) and was one of the founders of the network. The European Network of Living Labs (ENoLL) is a community of Living Labs with a sustainable strategy for enhancing innovation on a systematic basis. The overall objective is to contribute to the creation of a dynamic European innovation system, with a global reach. The Botnia Living Lab is constantly being developed further in close cooperation with end-users and stakeholders as well as researchers at Luleå University. The FormIT methodology developed at Botnia assists in Living Labs operations with users and other stakeholders as well as to assess the impact of the approach. Botnia's track record includes application areas such as: Smart Cities, mobile marketing, traffic information, energy efficiency, sports and culture, e-democracy and security and privacy. Botnia has also assisted several new Living Labs in the start-up phase to create a sustainable living lab operation.

The division of Information Systems at LTU in Sweden is a design- and innovation oriented research group that focuses on digital service innovation, information security and long-term digital preservation. We have more than 20 years of experience from research and development within the field of user-centred and user driven service innovation. Within this area we have a particular interest in processes and milieus for user centred digital innovations such as Living Labs. We are the main research partner of Botnia Living Lab. Architecture research includes architecture, technical direction, building construction, urban planning, cultural heritage, spatial planning and traffic planning for sustainable development in society. The research team sees architecture, design, economic, practical and functional design integrated with the aesthetic, harmonious, and symbolic dimensions. It also includes what architecture means for the relationship between people, nature, history and built environment in the various levels of society. We investigate and develop innovative proposals for how planning processes can be further developed, the urban and built environments, and buildings can be designed to better meet the needs and desires, resulting in large variations in seasonal climate and future climate change.

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Ph.D. Marita Holst: earned her PhD in 2007 in Social Informatics at Luleå University of Technology, and since then she works as project manager at Centre for Distance-Spanning Technology and Botnia Living Lab and she is a member of the ENoLL Council as well as coordinator of the Smart Cities Expert Group. Her research interests are methods and tools for creating collaborative working environments for innovative and boundary-crossing working groups. User centric and appreciative methods within the multi-perspective environment of Living Labs is currently much in focus in both international and national projects where she participates, leads WPs and Tasks as well as is member of project management groups. She has also published in conferences and journals and served as a referee in relation to these areas.	Female
Ph.D. Anna Ståhlbröst: is associate professor in Information Systems at Luleå university of technology connected to Botnia Living Lab. Her research interest is focused on Living Labs and user driven innovation processes supporting the development of digital innovations for smart cities and regions based on citizen needs. Anna's research has been published in several international journals, books and has been presented at many international conferences. She is active in innovation & research projects such as Privacy Flag, IoT Lab, and USEMP funded by the European Commission. Anna is also an assistant scientific director of the research and innovation area Enabling ICT at LTU, focusing on developing a Smart region.	Female
Ph.D. Agatino Rizzo: is active in the following research areas: Metropolitan Urban Policy, Global Urban Studies, and Sustainable Urban Development. His main research interests are: Comparative City-Studies and Megaprojects, GIS and Urban Growth/Shrinkage, Climate-Sensitive Planning and Urban Resilience. He has extensively worked on rapid urbanization in emerging markets in Asia and urban growth/shrinkage in Europe. He is an expert on Urban Design, Land Use Planning, GIS/Spatial Analysis, and Strategic Development Planning. Dr. Rizzo acts as a reviewer for some of the most established international journals in the urban planning field (eg, Cities, Landscape and Urban Planning, etc.) as well as for international professional associations and European agencies such as the International Society of City and Regional Planners and EU COST network.	Male

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

- Bergvall-Kåreborn, B., Ihlström Eriksson, C. and Ståhlbröst, A. (2015). Places and Spaces within Living Labs. Technology Innovation Management Review, Vol. 5, No. 12, pp.37-47.
- EBRAHIMABADI, S., JOHANSSON, C., RIZZO, A., & NILSSON, K. (2016). Microclimate assessment method for urban design: a case study in subarctic climate. Urban Design International. DOI: 10.1057/udi.2015.26.
- Krogstie, J, Ståhlbröst, A, Holst, M, Gudmundsdottir, A, Olesen, A, Braskus, L. Kulseng, L. (2013). Using a living lab methodology for developing energy savings solutions. Paper presented at the AMCIS2013, Chicago, US.
- RIZZO, A. (2016). Sustainable urban development and green megaprojects in the Arab states of the Gulf Region: limitations, covert aims, and unintended outcomes in Doha, Qatar. International Planning Studies. DOI: 10.1080/13563475.2016.1182896.
- RIZZO, A. & GALANAKIS, M. (2015). Transdisciplinary Urbanism: Three experiences from Europe and Canada. Cities, 47, 35–44. DOI: 10.1016/j.cities.2015.01.001.Ståhlbröst, A., Bergvall-Kåreborn, B. and Ihlström-Eriksson, C. (2015). Stakeholders in Smart City Living Lab Processes. American Conference on Information Systems, Puerto Rico, Puerto Rico,

RELEVANT PREVIOUS PROJECTS.

- Sense Smart City, 2010-2014, EC Structural Funds; The project will generate new and better ICT solutions that instrument urban areas to gather and combine information, such as energy, traffic, weather, events, activities, needs and opinions.
- Ear-IT, 2010-2014, FP7 - STREP; Experimenting with acoustic sensing in indoor and out-door environments. The purpose is to use sensor technology to improve safety, energy, traffic and much more.
- OrganiCity, Ongoing, H2020 - RIA; Putting the citizen in centre for the development of future cities and its services. Among other, services in waste management in a smart city will be developed.
- Attract C, 2014-2016, Vinnova; Within the interdisciplinary research project Attract, all aspects related to housing and infrastructures are conceived in an integrated manner in order to achieve attractive and sustainable housing in cold climates.
- Towards an Eco-Districts Strategy for Sustainable Urbanism in the Gulf Region: Greater Doha as case study, 2012-2015, Qatar National Research Fund; The project aims at developing eco-district strategies to implement sustainability at the district scale.

PARTNER N. 27: Arup Hong Kong - OVE ARUP & PARTNERS HONG KONG LTD, Hong Kong, China

ARUP

DESCRIPTION OF THE ORGANIZATION

We are an independent firm of designers, planners, engineers, consultants and technical specialists offering a broad range of professional services. Through our work we make a positive difference in the world. Founded in 1946 with an initial focus on structural engineering, Arup first came to the world's attention with the structural design of the Sydney Opera House, followed by its work on the Centre Pompidou in Paris etc.. Arup has since grown into a multi-disciplinary organisation. So far, Arup has more than 90 offices globally and covers more than 40 countries.

Arup has over 30 years' presence in Greater China, providing a full spectrum of design, engineering, planning and consulting services. We have worked on many of the region's most iconic structures, including the Bird's Nest and Water Cube in Beijing, Stonecutters Bridge in Hong Kong and Taipei Performing Arts Centre in Taipei. We are involved in cross-boundary facilities that are helping to forge closer ties in the territory, including Hong Kong-Zhuhai-Macao Bridge and Guangzhou-Shenzhen-Hong Kong Express Rail Link and smart and low carbon city planning projects, including Chongming Island Shanghai, Smart Kowloon East (Hong Kong) and Smart Tongzhou (Beijing) etc.

Arup's Research and Development department (under Arup University) is the internal think tank, creating and sharing knowledge inspired by the work we do and the challenges we face. We use targeted thinking, analysis and experimentation to strengthen the firm, keep us moving forward, and differentiate us from our competitors.

Arup will provide the necessary technical supports to the research, provide coordination on the research activities in China.

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Dr. Shuwei Wu: a well experienced researcher with multiple research interests. Various life/working experiences are giving him various inspirations on research analysis. He is Skills Leader of Foresight in East Asia and in charge of R&D in China. He is incorporating the benefits of Foresight, Research and Innovation into Development through collaboration with academy and industries in the region and worldwide and his current research interests are focused on Energy, City/Community Development and Transport etc.	Male

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

- Wu, S, (2014), 'Holistic Approach to Shape Future Cities' (Smart, Green and Resilient), One Chapter for the Book 'Future City Architecture for Optimal Living';
- Wu, S. (2015), Future Lujiazui: 2025 report, Arup;
- Wu, S. (2015) Smart Community practice and future in China, China City Newspaper;
- Wu, S. *et al.* (2015) Balancing urban Micro-Grids (MGs) in future planned communities, The Singapore Engineer, 3 (74);
- Wu, S. (2016), Smart Governance – Community First, One Chapter for the Book 'smart governance and new planning with coordination', collaboration with South China University of Technology;

RELEVANT PREVIOUS PROJECTS.

- Snapshots of Low Carbon City Development in China: discuss and summarize the better practices of implementing certain technologies, policies etc. during low carbon city development process under three themes, i.e. Low Carbon Energy, Urban Mobility and Sustainable Buildings; 2012, leading researcher;
- Cities Resilience Model- A Benchmarking Model for Developed Cities in Asia: Develop a model to test cities resilience in Asia through a set of indicators (e.g. energy security) under various categories (e.g. energy supply), test the model through Hong Kong data and make necessary improvements, 2013, leading researcher;
- Research on Micro Grid: 'Balancing urban microgrids in future planned communities', in collaboration with EA and London colleagues, and Greenwich University, Winner of Global Research Challenge 2013, co-ordinator;
- Smart Cities Development in China -- Smart cities policies and development framework, Pingshan, Shenzhen, 2014, co-ordinator;
- Future Lujiazui: 2025, Shanghai, exploring the development trend of Luajizui Community (one of the best smart communities in China), and portray one future image, 2015, leading researcher;
- Supervising final year project for SCUT (South China University of Technology) on 'Operation and service demands of smart theme community' (smart commercial centre and smart campus), 2016, supervisor;
- Delivering the study 'To Develop Strategy for UK China Collaboration on Agricultural Science Parks' for UK Science & Innovation Network with their financial support (FCO), 2016 (ongoing), leading researcher;

PARTNER N. 28: The Hong Kong Polytechnic University, Hong Kong, China

Faculty of Construction and Environment

DESCRIPTION OF THE ORGANISATION

The Hong Kong Polytechnic University (PolyU) is one of the major public universities in Hong Kong. The Faculty of Construction and Environment at PolyU is the largest higher education provider of professionals for the construction industry in Hong Kong. The Faculty has a local and international reputation of performing cutting-edge research in areas related to construction and built environment. In the latest (2016) QS World University Rankings by subject, PolyU ranked 12th in the world for the subject area of Architecture/ Built Environment, and 11th globally for the subject area of Civil and Environmental Engineering.

Hong Kong is a densely populated urban area, and it is located among clusters of mega cities in the Pearl River Delta Region in China. A large number of studies performed by the Faculty of Construction and Environment at PolyU aims at promoting sustainable urban development through smarter building and infrastructure solutions. Examples of research topics involve green building technologies, energy efficiency, eco-friendly technologies and management practices in urban areas, the use of recycled materials, and the application of ICT. The research activities have been intensely funded by local industries, governments, and international organizations. Many of the studies are cross-disciplinary in nature, providing systematic solutions to the challenges faced by today's cities.

The research team of this project at PolyU include experts from two Departments in the Faculty: The Department of Building and Real Estate (BRE) and the Department of Civil and Environmental Engineering (CEE). The contribution of the research team in this project would be (1) the development of new technologies to promote nature-based solutions to improve urban resilience to climate change and enhance water resources management, and (2) the development of a strategy for sustainable urban and building planning in response to extreme weathers. In particular, an integrated porous pavement and water storage/cleaning system would be developed for the mitigation of heavy rains, noise reduction, promotion of urban irrigation and even farming. PolyU will provide support and technical expertise in the proposed WP3, WP5, and WP7.

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Professor Geoffrey SHEN is a Chair Professor of Construction Management and Associate Dean of Faculty of Construction and Environment, The Hong Kong Polytechnic University. He has led a large number of research projects with total funding over HK$30 million and has authored more than 180 papers in peer-reviewed academic journals. He serves the editorial boards of several leading journals, and has been invited to give keynote presentations in a number of international conferences. He is the Immediate Past Chairman of the Global Leadership Forum for Construction Engineering and Management Programs. Professionally, he is an Eminent Fellow of the Royal Institution of Chartered Surveyors (RICS) and a Fellow of the Hong Kong Institute of Value Management. As a certified Value Management Facilitator (List A) recognised by the HKSAR Government, he has provided professional services for many client organisations in both the public and private sectors. He is a member of the CIB Task Group on Smart Cities and he has led a multi-disciplinary research project on land use in Kai Tak development which has been widely reported by the media.	Male
Dr. Yuhong Wang is an associate professor in the Department of Civil and Environmental Engineering. Dr. Wang has extensive research experience in both the United States and China. His main research strength líes in the development of sustainable solutions for building and infrastructures. Example research projects include the development of improved porous pavement systems (funded by the U.S. Green Building Council), sustainable development planning of nature reserves near cities (funded by the World Bank), and the use of innovative information technology for improving the efficiency of the construction industry (funded by the Construction Industry Council of Hong Kong). His research funding has exceded HK$30 million with research results disseminated in more than 100 professioal publications and implemented through government standards and guidances.	Male
Research Scientist Ling Chen: Ms. Ling Chen is currently a PhD candidate at the Hong Kong Polytechnic University. She is expected to graduate next year and plans to work on this Project. Ms. Chen receives her ungregraduate and master degree in computer science related discipline at a competitive university in	Female

Mainland China. She is currently working on the use of innovative ICT for the improvement of construction efficiency and sustainability. Her background in computing and civil engineering provides her unique strength to assist the implementation of this Project.	

RELEVANT PUBLICATIONS AND/OR PRODUCTS, SERVICES (INCLUDING WIDELY-USED DATASETS OR SOFTWARE) OR OTHER ACHIEVEMENTS RELEVANT TO THE CALL CONTENT.

Rattanachot W., Wang Y*., Chong D., and Suwansawas S. 2015. Adaptation strategies of transport infrastructures to global climate change, Transport Policy Vol. (41),159–166.

Wang* Y., Yu Huang, Wit Rattanachot, K.K. (Woody) Lau, Suchatvee S., 2014. Improvement of pavement design and management for more frequent flooding caused by climate change. Advances in Structural Engineering 18 (4), 487-496.

Y. Ahn, Wang Y., A. Pierce. 2012. Drivers and Barriers of Sustainable Design and Construction: The Perception of Green Building Experience. International Journal of Sustainable Building Technology and Urban Development, Vol.4 (1), 35-45.

Wang Y.*, X. Deng, D. Marcucci, Y. Le 2012. Sustainable development planning of protected areas near cities: a case study in China, ASCE Journal of Urban Planning and Development 139(2), 133–143.

Wang H., *Shen Q.P., Tang B.S., Lu C., Peng Y., Tang L.Y.N. (2014). A framework of decision-making factors and supporting information for facilitating sustainable site planning in urban renewal projects, Cities, 40, 44-55.

RELEVANT PREVIOUS PROJECTS.

- Analysing stakeholder-organization relationships in mega construction projects: a social network approach, Research Grants Council Hong Kong-General Research Fund, 20012/13, HK$700,000, Ref: PolyU 5246/12E
- The effect of using group support systems on virtual value management workshops for major construction projects, Research Grants Council Hong Kong-General Research Fund, 2009/10, HK$644,700 Ref: PolyU 5294/09E
- Incorporation of Flood Effect into Flexible Pavement Performance Modeling in Subtropical Coastal Environment Hong Kong PolyU: Central Research Grant, Contract Amount: HK$ 105,000
- Improvement of Porous Pavement for Effective Stormwater Management, funded by U.S. Green Building Council. Contract Amount: U.S.$ 222,014. 2008-2011
- Sustainable Development Planning of Hengshui Lake Wetland, funded by the World Bank. Contract Amount: RMB 690,000. 2004-2007

PARTNER N. 29: UBATEC S.A., Argentina

DESCRIPTION OF THE ORGANIZATION

UBATEC S.A. is a unit of technological association and transfer formed by the University of Buenos Aires, the Government of the City of Buenos Aires, the Argentine Industrial Union (Unión Industrial Argentina), and the General Confederation of Industry (Confederación General de la Industria). It was founded in 1991, inspired by the concept of the "Triángulo de Sábato" (Sábato's Triangle), a triad in which the university, the government and the productive sector interact in promoting innovation, thus contributing to the economic and social development of the country. UBATEC provides services for technological innovation management, technology transfer, technical assistance, program and project management, third-party fund administration, project assessment for the productive and private sectors, reports drafting, and consultancy for public - and, sometimes, multilateral - national and international bodies.

UBATEC's most frequent activities are:

- Analysis, diagnosis, and proposals for solutions to problems in the productive sector.

- Assistance and support in management processes of innovation and technology transfer.
- Technical assistance for national and international bodies, both public and private.
- Production of innovation projects for companies and institutions, and presentation before science and technology funding bodies.
- Investment projects evaluation at national and international levels.
- Follow-up, management control, and administration of national and international research funds.

UBATEC has a Business Advisory Council made up of more than thirty national technology-based companies. Their CEOs participate in decision-making related to project development and partner search in the private and public sectors for the processes of investment and technology transfer. One of the key features of UBATEC is its power for integrating multidisciplinary teams that bring together top level professionals. It has the capacity to make use of human resources and infrastructure of the University of Buenos Aires (UBA) - the biggest in the country -, and other national and international academic institutions with which UBATEC cooperates on an ongoing basis. These are, in particular, the University of Sao Paulo and the Autonomous University of Mexico. The three integrate the UNIVERSIA network. It is worth noting that UBACTEC's legal status allows it to provide a quick response to the requirements of organizations and companies. It has access to several bidding processes to provide consulting services to different companies, as well as public institutions, and multilateral bodies.

UBATEC has carried out activities, and is currently developing projects, financed by national and international organizations. Included among the latter are: UNICEF; UNESCO; Rusatom Overseas; Guggenheim Foundation; Korea Foundation; Carolina Foundation; National Institutes of Health; Howard Hughes Medical Institute; American Association Advancement Sciences; Global Biodiversity International Facility; Centre National de la Recherche Scientifique; The Inter American Institute for Global Change Research; European Commission; National Institute of Agricultural Research of Uruguay. As for national organizations it can be mentioned: Program for Agricultural Provincial Services of the National Ministry of Agro-Industry; Ministry of Social Development; Ministry of Defense; Argentine Navy; Institute of Scientific and Technical Research for Defense; Ministry of Health; Ministry of Science, Technology and Productive Innovation; The National Scientific and Technical Research Council; Federal Council of Science and Technology; The National Agricultural Technology Institute; National Agrifood Health and Quality Service; Ministry of Environment and Sustainable Development.

As added value to its management capacity, UBATEC is included in the Registry of Consulting Firms for Environmental Impact Studies (RCEIA) of the Argentine Ministry of Environment and Sustainable Development, and in the State Suppliers Information System (SIPRO). This results in simplified contracting procedures and, at the same time, is evidence of UBATEC's organizational performance, and compliance with formal requirements. The company regularly undergoes internal audits by its Auditing Commission. Among other members, the Commission is composed of the General Office of the Comptroller, which guarantees the proper use of public funds allotted to our company. Furthermore, in its role of program and project implementer or manager, UBATEC is regularly audited and supervised by funding bodies or by auditors assigned by them, such as Waterhouse & Coopers, the National General Auditing Office, Internal Audits of the Inter-American Development Bank, the University of Buenos Aires, the Government of Buenos Aires City and Unicef Argentina, among others.

CVS OF PERSONS RESPONSIBLE FOR CARRYING OUT THE PROJECT

Iribarne, Rosana Isabel: University: University of Buenos Aires. Graduated in May 1984 - Chemical Engineer Courses and seminars: •"Introduction to Complexity" Santa Fe Institute (2014) training on "Management of power - ISO 50001" •Seminar Secretary of energy of the nation (2014) •Workshop on organic waste - a valuable resource for a more decentralized Argentine power production. Dr. Ulrich Link, Board of Directors, Investitions - und Strukturbank Rheinland-Pfalz (ISB) (2012) environment, development and society • Reflections and challenges for the integration of actors and perspectives. Organization of Ibero-American States(2012) •Conference "Sustainable Building Systems" M. Paz Gutierrez Assistant Professor of Architecture-CAI (2012) •Conference " Sustainable mobility"-Eng. Enric c Galissa (University Polytechnic of Catalonia)-FIUBA (2011) •Seminar "Proposed green policies for Argentina" organized by the Environmentalist Green Foundation (2011) Publishing •Restaurants waste: a source of resources-Crossroads Magazine * 54-Mayo 2012 •Impact study on environment due to the intensive use of fluorescent compact lamps. Web page of the Ministry of Energy of the Argentine Republic. May 2006. • "Barriers to cleaner production" - sanitary engineering and environmental Nº 71 - December 2003 • "Regulation for the exploitation of the water resources in the province of Buenos Aires' underground" key of	Female

the province - October 2003 Coordinator of the Commission of Guarani aquifer Advisory Economic Forum Social of MERCOSUR - Argentine Section Former Coordinator of the Commission of students and young professionals WEF – AIDIS . Member of the promoter group for urban transportation sustainable - Ciudad Autónoma de Buenos Aires - Member of the Advisory Board Department of chemistry of the School of Engineering of the University of Buenos Aires. Member of the Clean Productioin Division of the Association Argentina of sanitary engineering and environmental sciences (AIDIS).	
Parodi, Eduardo Lorenzo: Civil Engineer, graduated from the University of Buenos Aires. Massive urban transport specialist, began his activity in the project UNDP 92 / 002, in 1993. In 1994 he joined the Department of evaluation and development of the National Commission of automotive transportation. He served as Advisor to the Undersecretary of automotive transportation, he was member of the Department of long-distance and international transport of passengers of the National Commission for transport regulation. It has been named Undersecretary of planning of long-distance and international passengers transportation, charge that currently exerts. He has integrated the official delegations in the subgroup of work SGT5 transport of the Mercosur and at bilateral meetings of authorities of application of the agreement of international terrestrial transport (ATIT). In teaching, since 1994 he works as an Assistant in the Chair of Transport Planning, Department of Transportation, School of Engineering, University of Buenos Aires. Professor at the Department of transport planning (1998-2001); Assistant Professor at the Chair of evaluation of transportation projects (2002-2008) and member, since 2007 of the academic Committee in the master's degree in transportation from the Technical Superior School of the Argentine army. He joined, in representation of the Transport Department of the School of engineering of the UBA, the interdisciplinary program of the University of Buenos Aires on transport (PIUBAT) and the University network of transportation. He coordinates the master planning and transport management which is developed jointly with the Schools of Architecture and Planning, Economic Sciences and Engineering of the University of Buenos Aires.	Male
Velázquez, Maximiliano Augusto:1995-2002 University of Buenos Aires Buenos Aires, Argentina Litentiature in Sociology, School of Social Sciences Posgraduate Studies 2010-present - University of Buenos Aires Buenos Aires, Argentina, Master in urban and Regional planning, urban and Regional planning training program, School of Architecture design and urban planning, 2009-2013 University of Buenos Aires Buenos Aires, Argentina specializing in urban and Regional planning, training program planning urban and Regional, School of Architecture, design and urbanism, 2014-present University of Buenos Aires Buenos Aires, Argentina.Career of specialization in teaching for architecture, design and urbanism. 2003-2007 University of Buenos Aires Buenos Aires, Argentina Courses of specialization in history and criticism of architecture and urbanism, Faculty of architecture, design and urbanism 1999 Career Facultad Latinoamericana de Ciencias social Buenos Aires, Argentina Course of Social and urban management of autonomous city", participation in research CREDIT 2011-present CETAM-UBA, Buenos Aires, Argentina in the context of the "New methodologies for the analysis brokers Metropolitan brokers. UBACyT ": Application of satellital technology to the management of urban mobility and the land using planning", Prog.11-14 20020100100967BA and Prog.14-17 20020130100399BA, Fellow investigator during the period of scholarship, later charge of researcher, theme: transport, mobility and urban. 2013-present PREHISTORICAL Buenos Aires, “Region Metropolitan Area of Buenos Aires. Mobility, emerging centralities and mechanisms of action between public and private actors. ", PICT 2011 - 1407, headquarters: multidisciplinary Institute of History and Human Sciences (IMHICIHU-CONICET) 2011-present CETAM - UBA, Buenos Aires, Argentina in the framework of the interdisciplinary UBACyT project" mobility and poverty: a studio of the accessibility approach to transport in the Metropolitan Area of Buenos Aires "(FSOC)"	Male

RELEVANT PREVIOUS PROJECTS.

- Water sanitation. Innovative strategies for the CONVERSION of waste in products for remediation of the environment and CO2 capture

- PICT 2012-2188 - BONELLI, Paul RICARDO. Design of a system of detection of the viral contamination applicable to the control of the viral diseases transmitted by food.
  PICT 2012-2679 - MBAYED, VIVIANA herbicide glyphosate and its interaction with other anthropogenic environmental change agents: impact on freshwater
  PICT 2014 - 1586 - PIZARRO HAYDEE NORMA Dispersion of pollutants dissolved in flows with material particulate 2013-02584.
- Home treatment of arsenical waters.
  PIDDEF 028/2012 - YONNI, FERNANDO. Arsenic in rural environments.
  Techniques of monitoring and 2012-00759 – IRIEL, Analia
- Energy: Dynamic models of agricultural sustainability: flows of useful energy and provision services ecosystem at different scales, 2013 - 1599
  FERRARO DIEGO OMAR Computational study from materials based on oxides for your employment in the generation sustainable power 2011 - 01312
  IRIGOYEN, Beatrice (finished the 12/03/16) catalytic processes for the sustainable production of microalgae 2011-02746

4.2. Third parties involved in the project (including use of third party resources)

PARTNER N. 1: VTT - Teknologian Tutkimuskeskus VTT, Finland, *No third parties involved, No Subcontracting*

PARTNER N. 2: Fraunhofer IAO, Germany, *No third parties involved , No Subcontracting*

PARTNER N. 3: City Of Eindhoven, The Netherlands, *No third parties involved, Subcontracting (see table)*

Does the participant plan to subcontract certain tasks (please note that core tasks of the project should not be sub-contracted)	Yes
The following cost will be subcontracted by the City (total 1,6 M€, EU funding 450 000€): • Victoria Park: Green Areas; daylighting of watercourses and water stockage area development and heat stress measures (€1,000,000/200 000€) • Witte Dame; Gevel V&D; Seepaerdstate: Heat stress measures and green roofs and facades (€500,000/80 000€) Innovative procurement • Comprehensive urban plan support to study for the whole city (€100,000/80 000€) The organisation of the European Awareness Scenario Workshops training and support to 3 local workshops for each of the front runner cities. (http://cordis.europa.eu/easw/) (€90,000/90 000) The works must be subcontracted as they involve measures that will be developed and implemented in the project with the strong participation and engagement of local stakeholders through innovative procurement processes engaging stakeholders in the setting of ambitions; dialogue with the market and setting of award criteria. Hence the precise measures and companies carrying them out are not known at the start of the project, requiring a procurement process. However, the approach allows for the testing of a very innovative procurement process involving the users of the demonstration area(s). The city of Eindhoven has experience with innovative procurement process through, among others, the SPEA project co-financed by the European Commission (FP-7) on the use of innovative energy technologies in public buildings.	

PARTNER N. 4: Comune di Genova, Italy, *No third parties involved, Subcontracting (see table)*

Does the participant plan to subcontract certain tasks (please note that core tasks of the project should not be sub-contracted)	Yes
The following cost will be subcontracted by the City (EU funding 150 000€): • Expertice in designing and implementing framework of a new recreational public space including creation of ponds and wetlands to collect, store and clean water before gradual release into water courses, in addition the expert knowledge in using permeable surfaces in hard landscape construction to provide aquifer recharge. • Expertice in co-creating, desingning and implementing productive green space for urban farming and how to increase public awardness of flooding and preventing flooding • Expertice in implementing and desing the rain gardens to enhance biodiversity and citizen well being • Expertice in co-creation for urban flooding prevention solutions	

The works must be subcontracted as they involve measures that will be developed and implemented in the project with the strong participation and engagement of local stakeholders through innovative procurement processes engaging stakeholders in the setting of ambitions; dialogue with the market and setting of award criteria. Hence the precise measures and companies carrying them out are not known at the start of the project, requiring a procurement process. However, the approach allows for the testing of a very innovative procurement process involving the users of the demonstration area(s).

PARTNER N. 5: City of Tampere, Finland, *No third parties involved, Subcontracting (see table)*

Does the participant plan to subcontract certain tasks (please note that core tasks of the project should not be sub-contracted)	Yes
Subcontracting for special expertice related to NBS (Total 145 000 €): • Planning expertise of Bio-filtration of Park Virolainen 40 000 €, • Planning of Stormwater structures of Park Tervaslampi 30 000 € • Usability and duration planning and risk assessment 30 000 € • Algae demonstrations 15 000 € • Local participation and co-creation events 10 000 € • Organising workshops in NBS solutions 20 000 € The works must be subcontracted as they involve measures that will be developed and implemented in the project with the strong participation and engagement of local stakeholders through innovative procurement processes engaging stakeholders in the setting of ambitions; dialogue with the market and setting of award criteria. Hence the precise measures and companies carrying them out are not known at the start of the project, requiring a procurement process. However, the approach allows for the testing of a very innovative procurement process involving the users of the demonstration area(s).	

PARTNER N. 6: Stavanger City, Norway, *No third parties involved, No Subcontracting*

PARTNER N. 7: Castellon - Castellon City Council, Spain, *No third parties involved, No Subcontracting*

PARTNER N. 8: Ville de Cannes, France, *No third parties involved , No Subcontracting*

PARTNER N. 9: Prague Institute of Planning and Development (IPR Prague), Czech Republic, *No third parties involved, No Subcontracting*

PARTNER N. 10: Başakşehir Municipality, Turkey, *No third parties involved, No Subcontracting*

PARTNER N. 11: ENoLL – European Network of Living Labs, Belgium, *No third parties involved, No Subcontracting*

PARTNER N. 12: ERRIN - European Regions Research & Innovation Network, Belgium, *No third parties involved, No Subcontracting*

PARTNER N. 13: LAND - Landscape Architecture Nature Development, Italy, *No third parties involved, No Subcontracting*

PARTNER N. 14: ENG - Engineering – Ingegneria Informatica S.p.a, Italy, *Linked third party involved (see table) , No Subcontracting*

THIRD PARTY OF ENG - ENGINEERING – INGEGNERIA INFORMATICA S.P.A, ITALY INVOLVED IN THE UNALAB PROJECT

Does the participant plan to subcontract certain tasks (please note that core tasks of the project should not be sub-contracted)	No
Does the participant envisage that part of its work is performed by linked third parties [2]	Yes
Engineering.MO is the linked third party that will provide ENG with the IT cloud infrastructure, the FIWARE environment and related services (in particular setup and maintenance throughout the project) that will be used both to tailor the FIWARE based tools of the UNaLab framework and to host the fully integrated UNaLab framework itself that will be used during the execution of pilots. Engineering.MO is a legal entity linked to ENG, both companies being part of the Engineering Group. According to art. 14 of the General Model Grant Agreement, Engineering.MO (the linked third party) will declare the eligible costs incurred for implementing the foreseen actions relating to Task 4.6 of the UNaLab project as summarized. The costs for the actions that will be carried out by the linked third party are quantified as follows: • 80.000 € for personnel costs; • 20.000 € for indirect costs (25% of total direct costs);	

[2] A third party that is an affiliated entity or has a legal link to a participant implying a collaboration not limited to the action. (Article 14 of the Model Grant Agreement).

• Total costs: 100.000€ Costs of the Engineering.MO (linked third party) are included in the ENG's budget (beneficiary party).	
Does the participant envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

PARTNER N. 15: M3S SRL, Italy, *No third parties involved, No Subcontracting*

PARTNER N. 16: Ramboll Management Consulting, Finland, *No third parties involved, No Subcontracting*

PARTNER N. 17: InnoHub, The Netherlands, *No third parties involved , No Subcontracting*

PARTNER N. 18: !Impuls, The Netherlands, *No third parties involved, No Subcontracting*

PARTNER N. 19: DAPP - D'Appolonia SpA, Italy, *No third parties involved, No Subcontracting*

PARTNER N. 20: IRE Regional Agency for Infrastructures, Urban Regeneration and Energy for Liguria, Italy, *No third parties involved , No Subcontracting*

PARTNER N. 21: Espaitec, Science And Technology Park Of Universitat Jaume I Of Castellon, Spain, *No third parties involved, No Subcontracting*

PARTNER N. 22: Hlavní město Praha, Czech Republic, *No third parties involved, No Subcontracting*

PARTNER N. 23: TU/e – Eindhoven University of Technology, The Netherlands, *No third parties involved, Subcontracting (see table)*

Does the participant plan to subcontract certain tasks (please note that core tasks of the project should not be sub-contracted)	Yes
Subcontracting for special expertice related to NBS (Total 20 500 €): • Costs for hiring a visualizer to join the vision workshops in the 5 follower cities and create a poster size visual of the desired future scenario (5*€3100). Costs for native English speaker to correct reports (est. 90000 words @ €5000).	

PARTNER N. 24: UAVR - University of Aveiro , Portugal, *No third parties involved, No Subcontracting*

PARTNER N. 25: USTUTT – Universität Stuttgart, Germany, *No third parties involved , No Subcontracting*

PARTNER N. 26: Botnia Living Lab, Luleå University of Technology, Sweden, *No third parties involved, Subcontracting (see table)*

Does the participant plan to subcontract certain tasks (please note that core tasks of the project should not be sub-contracted)	Yes
Subcontracting for special expertice related to NBS (Total 10 000 €): • Design and production of handbook and training material based on our work in WP2.	

PARTNER N. 27: Ove Arup & Partners Hong Kong Ltd, Hong Kong, China, *No third parties involved, No Subcontracting*

PARTNER N. 28: The Hong Kong Polytechnic University, Hong Kong, China, *No third parties involved , No Subcontracting*

PARTNER N. 29: UBATEC S.A., Argentina, *No third parties involved, No Subcontracting*

5. ETHICS AND SECURITY

5.1 Ethics

As the activities within UNaLab involve human participants and personal data collection and processing, the safety, rights, dignity and well-being of participants must be ensured. The data will be collected in partner cities. With regard to the collection and processing of data, the regulations of the participating countries on data and state legislation related to issues of data privacy and distribution will be strictly followed. In addition the EU Directive on the Protection of Personal Data is followed.

In the UNaLab project personal data is collected in co-creation workshops and interviews. Our research respects the rights and privacy of the involved participants, and not involves any sensitive or confidential issues. No data about religion, sexual orientation, ethnic origin or any other data whose collection is prevented by law will be collected. The participation is based on the free will of the participants. Before the start of the workshops/interviews, the participants involved will be informed about the expected timeframe, their roles and tasks as well as about their right to withdraw at any time without providing reasons for doing so in the language that they all understand. Moreover, the information about how and by whom the data will be collected and processed and how personal data will be encrypted and protected will be supplied. Afterwards the participants have the right to ask clarifying questions. The organisations are obliged to give detailed answers and make sure that the participants have fully

understood all the information provided and are able to give their informed consent/dissent. Persons that are unable to communicate and thus are not able to express consent or dissent will not be included into the UNaLab study process.

Personal data will be encrypted and the information will be anonymised so that it will not be possible to infer individual identities. Any project results will be presented as summary statistics and high-level aggregates. Should some project data be reused, it will be first aggregated to a sufficient level. Prior to making data publicly available it will be anonymised, Non-anonymised data within UNaLab will only be used for the purposes of the UNaLab project, will be kept strictly confidential and not made available to the public.

All data will be stored in a confidential manner and in accordance with the EU Directive 95/46/EC regarding use of personal data. All information security management will follow the guidelines of ISO/IEC 27002 (http://www.27000.org/iso-27002.htm).

UNaLab is participating in the Pilot on Open Research Data in Horizon 2020 and this requires the development of a Data Management Plan (DMP). The DMP will be developed in WP 1 in close collaboration with all partners and in full accordance with the respective legal framework of the EU and the participating countries.

In accordance with the EU requirements, the DMP will define what data will be generated, whether and how it will be exploited and made accessible for verification and re-use and how the data will be captured and preserved.

In order to ensure ethics management within the UNaLab project, ethics management activities have been included in the project as part of WP1 Project Management (Task 1.6). An external ethics adviser will be appointed and communicated to the European Commission before the beginning of the project. A report by an Ethics Advisor is submitted to the REA with the financial reports.

5.2 Security

This project will not involve activities or results raising security issues, nor will it involve EU classified information as background or results.

ANNEX 1: LETTERS OF SUPPORT

UBATEC S.A

Eduardo Cassullo
General Director
UBATEC S.A:
UBATEC/GCBA
City of Buenos Aires
Pte.Roque S. Peña 938 – 6°Piso
1035 C.A.B.A.
Argentina

Letter of Support
for the
Urban Nature Labs (UNaLab) Project

submitted as a project proposal within the Horizon 2020 Call SCC-02-2016-2017: *Demonstrating innovative nature-based solutions in cities.*

I the undersigned, confirm on behalf of my local authority, UBATEC/Government of the City of Buenos Aires our interest in the UNaLab project. We support the application and intend to work with VTT and the UNaLab consortium partners on the proposed UNalab project. Our role as a non-EU Follower City and expert advisor will be to network and share knowledge with the UNaLab project team with respect to: (i) the City of Buenos Aires' urban environmental concerns – specifically, the climate- and water-related challenges facing Buenos Aires; (ii) the current state-of the art related to the implementation of nature-based solutions in Buenos Aires; (iii) the City of Buenos Aires' view on knowledge and technology gaps; and, (iv) the City's view on institutional and social barriers to implementation of the urban living lab for nature-based solutions co-creation process in Argentina, or more broadly in the South American context.

We understand and accept that this will involve attending UNaLab project meetings, workshops and/or demonstration events, as well as online peer-to-peer interaction to maximise knowledge sharing.

We believe that UNaLab addresses issues critical to the harmony, stability and sustainability of our city in relation to effective nature-based solutions to compat climate change and manage urban water resources, whilst improving city liveability. We are interewsted in learning from good practice across Europe and also have a contribution to make with existing local policies and practices. We believe that the UNaLab project is in line with the goals and aspirations of our local authority, and is consistent with the strategies of our organization.

We fully support the objectives of UNaLab and encourage the European Commission to fund this project, and wish the project Consortium every success in the accomplishment of the proposed work.

This document is not legally binding.

Eduardo Cassullo
General Director

August 10th 2016

广州南沙开发区明珠湾区开发建设办公室

Name: Liao Zongze
Job title : Director
City of Guangzhou
Department or Authority:Development and Construction Office of Mingzhuwan ,Guangzhou
Address: Nansha Government ,No 1 Fenghua Avenue,Guangzhou ,CHINA

Letter of Support
for the
Urban Nature Labs (UNaLab) Project

submitted as a project proposal within the Horizon 2020 Call SCC-02-2016-2017: *Demonstrating innovative nature-based solutions in cities.*

I the undersigned, confirm on behalf of my local authority, _____ **our interest in the UNaLab project. We support the application and intend to work with VTT and the UNaLab consortium partners on the proposed UNalab project. Our role as a non-EU Follower City and expert advisor will be to network and share knowledge with the UNaLab project team** with respect to: (i) the City of Guangzhou's urban environmental concerns – specifically, the climate- and water-related challenges facing Guangzhou; (ii) the current state-of the art related to the implementation of nature-based solutions in Guangzhou; (iii) the City of Guangzhou's view on knowledge and technology gaps; and, (iv) the City's view on institutional and social barriers to implementation of the urban living lab for nature-based solutions co-creation process in Guangzhou, or more broadly in the Chinese context.

We understand and accept that this will involve attending UNaLab project meetings, workshops and/or demonstration events, as well as online peer-to-peer interaction to maximise knowledge sharing.

We believe that UNaLab addresses issues critical to the harmony, stability and sustainability of our city in relation to effective nature-based solutions to compat climate change and manage urban water resources, whilst improving city liveability. We are interested in learning from good practice across Europe and also have a contribution to make with existing local policies and practices. We believe that the UNaLab project is in line with the goals and aspirations of our local authority, and is consistent with the strategies of our organization.

We fully support the objectives of UNaLab and encourage the European Commission to fund this project, and wish the project Consortium every success in the accomplishment of the proposed work.

This document is not legally binding.

Liao Zongze Liao Zong Ze

Director of Development and Construction Office of Mingzhuwan ,Guangzhou

Signature

Date 2016/08/25

REDE BRASILEIRA DE CIDADES INTELIGENTES & HUMANAS

André Gomyde

President

Brazilian Human Smart Cities Network

Avenida Construtor David Teixeira, 105/502, Mata da Praia, Vitoria, ES, Brazil, ZIP: 29.065-320

Letter of Support for the
Urban Nature Labs (UNaLab) Project

Submitted as a project proposal within the Horizon 2020 Call SCC-02-2016-2017: Demonstrating innovative nature-based solutions in cities.

I the undersigned, confirm on behalf of my local authority, Rede Brasileira de Cidades Inteligentes e Humanas, our interest in the UNaLab project. We support the application and intend to work with VTT and the UNaLab consortium partners on the proposed UNalab project. Our role as a network of non-EU Follower Cities and expert advisor will be to network and share knowledge with the UNaLab project team with respect to: (i) the Brazilian Cities urban environmental concerns – specifically, the climate- and water-related challenges; (ii) the current state-of the art related to the implementation of nature-based solutions in Brazilian Cities; (iii) the Brazilian Cities view on knowledge and technology gaps; and, (iv) the Cities view on institutional and social barriers to implementation of the urban living lab for nature-based solutions co-creation process in the Brazilian context.

We understand and accept that this will involve attending UNaLab project meetings, workshops and/or demonstration events, as well as online peer-to-peer interaction to maximise knowledge sharing.

We believe that UNaLab addresses issues critical to the harmony, stability and sustainability of our member cities in relation to effective nature-based solutions to compat climate change and manage urban water resources, whilst improving city liveability. We are interested in learning from good practice across Europe, sharing the Brazilian practices, and also have a contribution to

Fórum Nacional de Secretários e Dirigentes Municipais de Ciência, Tecnologia e Inovação

FNP Frente Nacional de Prefeitos

REDE
BRASILEIRA
DE CIDADES
INTELIGENTES
& HUMANAS

make with existing local policies and practices. We believe that the UNaLab project is in line with the goals and aspirations of our local authorities, and is consistent with the strategies of our organization.

We fully support the objectives of UNaLab and encourage the European Commission to fund this project, and wish the project Consortium every success in the accomplishment of the proposed work.

This document is not legally binding.

André Gomyde

President

September, 05, 2016

Fórum Nacional
de Secretários e Dirigentes Municipais
de Ciência, Tecnologia e Inovação

Frente Nacional de Prefeitos

Prefeitura de Joinville

Secretaria de Integração e Desenvolvimento Econômico

Name: **Danilo Pedro Conti**
Job title: Municipal Secretary of Integration and Economic Development
Organization: City Hall of Joinville
Department or Authority: Integration and Economic Development Department
Address: Rua Luiz Niemeyer, 54 – Palacete Niemeyer
89201-060 Joinville, SC, Brazil

Letter of Support
for the
Urban Nature Labs (UNaLab) Project

submitted as a project proposal within the Horizon 2020 Call SCC-02-2016-2017: *Demonstrating innovative nature-based solutions in cities.*

I the undersigned, confirm on behalf of my local authority, Danilo Pedro Conti, our interest in the UNaLab project. We support the application and intend to work with VTT and the UNaLab consortium partners on the proposed UNalab project. Our role as a network of non-EU Follower Cities and expert advisor will be to network and share knowledge with the UNaLab project team with respect to: (i) the Brazilian Cities urban environmental concerns – specifically, the climate- and water-related challenges; (ii) the current state-of the art related to the implementation of nature-based solutions in Brazilian Cities; (iii) the Brazilian Cities view on knowledge and technology gaps; and, (iv) the Cities view on institutional and social barriers to implementation of the urban living lab for nature-based solutions co-creation process in the Brazilian context.

We understand and accept that this will involve attending UnaLab project meetings, workshops and/or demonstration events, as well as online peer-to-peer interaction to maximise knowledge sharing.

We believe that UNaLab addresses issues critical to the harmony, stability and sustainability of our member cities in relation to effective nature-based solutions to compat climate change and manage urban water resources, whilst improving city liveability. We are interested in learning from good practice across Europe, sharing the Brazilian practices, and also have a contribution to make with existing local policies and practices. We believe that the UNaLab project is in line with the goals and aspirations of our local authorities, and is consistent with the strategies of our organization.

We fully support the objectives of UNaLab and encourage the European Commission to fund this project, and wish the project Consortium every success in the accomplishment of the proposed work.

This document is not legally binding.

Danilo Pedro Conti
Secretary of Integration and Economic Development Department

September 5, 2016

Prefeitura de Joinville

Secretaria de Integração e Desenvolvimento Econômico

Nome: **Danilo Pedro Conti**
Cargo: Secretário de Integração e Desenvolvimento Econômico
Organização: Prefeitura Municipal de Joinville
Departamento ou Autoridade: Secretaria de Integração e Desenvolvimento Econômico
Endereço: Rua Luiz Niemeyer, 54 – Palacete Niemeyer
89201-060 Joinville, SC. Brasil

Carta de Apoio
ao
Projeto *Urban Nature Labs* (UNaLab)

apresentado como uma proposta de projeto dentro do "Horizon 2020 Call SCC-02-2016-2017": Demonstrando soluções ecológicas inovadoras em cidades

Eu, abaixo-assinado, confirmo, em nome de minha autoridade local, Danilo Pedro Conti, nosso interesse no projeto UNaLab. Apoiamos a aplicação e pretendemos trabalhar com VTT e os parceiros do consórcio UNaLab no projeto UNaLab sugerido. Nosso papel, como uma rede de Outras Cidades não membros da União Européia e consultoria especializada, será criar uma rede de contatos e compartilhar conhecimento com a equipe do projeto UNaLab no que se refere: (i) a assuntos ambientais urbanos de cidades brasileiras – mais especificamente no que diz respeito a desafios relacionados a clima e à água; (ii) ao que há de mais inovador quanto a implementação de soluções ecológicas em cidades brasileiras; (iii) o ponto de vista de cidades brasileiras em relação ao conhecimento e lacunas na tecnologia; e (iv) o ponto de vista das cidades quanto às barreiras institucionais e sociais na implementação do "urban living lab" para soluções ecológicas processo de co-criação no contexto brasileiro.

Entendemos e aceitamos que isto implicará na participação de reuniões para discussão de projetos UnaLab, oficinas e/ou eventos de demonstração, bem como interação pessoal *online* a fim de maximizar o compartilhamento de conhecimento.

Acreditamos que o UNaLab aborda assuntos críticos quanto a harmonia, estabilidade e sustentabilidade de nossas cidades em relação a soluções ecológicas efetivas para compartilhar mudanças climáticas e administrar recursos hídricos urbanos ao mesmo tempo em que melhora as condições de vida na cidade. Estamos interessados em aprender a partir das boas práticas na Europa, compartilhando as práticas brasileiras e também ter uma contribuição a fazer com as políticas e práticas locais existentes. Acreditamos que o projeto UNaLab está alinhado com os objetivos e aspirações de nossas autoridades locais, e está consistente com as estratégias de nossa organização.

Apoiamos totalmente os objetivos da Comissão Europeia para financiar o presente projeto e desejamos sucesso ao Consórcio de projetos para a realização do trabalho proposto.

O presente documento não é legalmente vinculativo.
Danilo Pedro Conti
Secretário de Integração e Desenvolvimento Econômico

5 de setembro de 2016.

André Gomyde
President
Companhia de Desenvolvimento de Vitoria
Rua Fortunato Ramos, 30, Ed. Cima Center, 4º andar, Santa Lucia, Vitoria, ES, Brazil
City of Vitoria

Letter of Support for the
Urban Nature Labs (UNaLab) Project

Submitted as a project proposal within the Horizon 2020 Call SCC-02-2016-2017: Demonstrating innovative nature-based solutions in cities.

I the undersigned, confirm on behalf of my local authority,Companhia de Desenvolvimento de Vitória our interest in the UNaLab project. We support the application and intend to work with VTT and the UNaLab consortium partners on the proposed UNalab project. Our role as a non-EU Follower City and expert advisor will be to network and share knowledge with the UNaLab project team with respect to: (i) the City of Vitoria urban environmental concerns – specifically, the climate- and water-related challenges facing Guangzhou; (ii) the current state-of the art related to the implementation of nature-based solutions in the City of Vitoria; (iii) the City of Vitoria view on knowledge and technology gaps; and, (iv) the City's view on institutional and social barriers to implementation of the urban living lab for nature-based solutions co-creation process in the City of Vitoria, or more broadly in the Brazilian context.

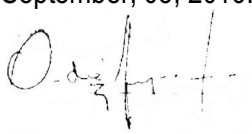
We understand and accept that this will involve attending UNaLab project meetings, workshops and/or demonstration events, as well as online peer-to-peer interaction to maximise knowledge sharing.

We believe that UNaLab addresses issues critical to the harmony, stability and sustainability of our city in relation to effective nature-based solutions to compat climate change and manage urban water resources, whilst improving city liveability. We are interested in learning from good practice across Europe and also have a contribution to make with existing local policies and practices. We believe that the UNaLab project is in line with the goals and aspirations of our local authority, and is consistent with the strategies of our organization.

We fully support the objectives of UNaLab and encourage the European Commission to fund this project, and wish the project Consortium every success in the accomplishment of the proposed work.

This document is not legally binding.

André Gomyde
President
September, 05, 2016.



REGIONE LIGURIA

August 24th, 2016

Oggetto: **Letter of Support**
for the **Urban Nature Labs (UNaLab) Project**
submitted as a project proposal within the Horizon 2020 Call SCC-02-2016-2017: *Demonstrating innovative nature-based solutions in cities.*

I the undersigned, confirm on behalf of my local authority, the Liguria RIS3 region, our support for the UNaLab project. We offer our in-principle support for the proposed work by our in-house regional agency IRE and the UNaLab consortium partners on the UNalab project led by VTT. The objectives and planned activities of the UNaLab project are aligned with the Region's Research and Innovation Strategies for Smart Specialisation (RIS3 strategies), particularly with respect to:

(i) support for technological as well as practice-based innovation and aiming to stimulate private sector investment;
(ii) full involvement of stakeholders in actions which involve innovation and experimentation; and,
(iii) provision of integrated, place-based, evidence-based systems to improve urban climate and water resilience, with sound monitoring and evaluation frameworks.

The UNaLab project involves the refinement and use of innovative, trans-disciplinary methods and technologies to address issues critical to the harmony, stability and sustainability of urban areas in relation to effective nature-based solutions to combat climate change and manage urban water resources, whilst improving city liveability. **The UNaLab project and proposed project activities with the City of Genova, supported by IRE, are directly aligned with the Liguria regional priority area "Safety and quality of life in the territory".**

We support the proposed UNaLab project activities in principle as strongly aligned with the local RIS3 agenda consistent with the strategies of our organisation.

We fully support the objectives of UNaLab and encourage the European Commission to fund this project, and wish the project Consortium every success in the accomplishment of the proposed work.

This document is not legally binding.

Gabriella Drago
Director General
Department of Economic Development

TAMPERE REGION

Petri Räsänen
Director, Innovation and Foresight
Pirkanmaa (Tampere Region)
Council of Tampere Region
Nalkalankatu 12, 33210 Tampere, Finland

Letter of Support

for the
Urban Nature Labs (UNaLab) Project

submitted as a project proposal within the Horizon 2020 Call SCC-02-2016-2017: *Demonstrating innovative nature-based solutions in cities.*

I the undersigned, confirm on behalf of my local authority, the Pirkanmaa RIS3 region, our support for the UNaLab project. We offer our in-principle support for the proposed work by VTT and the UNaLab consortium partners on the UNalab project. The objectives and planned activities of the UNaLab project are aligned with the Region's Research and Innovation Strategies for Smart Specialisation (RIS3 strategies), particularly with respect to:

(i) support for technological as well as practice-based innovation and aiming to stimulate private sector investment;
(ii) full involvement of stakeholders in actions which involve innovation and experimentation; and,
(iii) provision of integrated, place-based, evidence-based systems to improve urban climate and water resilience, with sound monitoring and evaluation frameworks.

In particular, the UNaLab project and proposed project activities with the City of Tampere are directly aligned with with the Pirkanmaa regional priority areas "Open Innovation Environment: innovation platform and growth services, system trial and demonstration, global co-learning and envioronment", and "Smart Cities".

The UNaLab project involves the refinement and use of innovative, trans-disciplinary methods and technologies to address issues critical to the harmony, stability and sustainability of urban areas in relation to effective nature-based solutions to compat climate change and manage urban water resources, whilst improving city liveability. We support the proposed UNaLab project activities in principle as strongly aligned with the local RIS3 agenda consistent with the strategies of our organisation.

We fully support the objectives of UNaLab and encourage the European Commission to fund this project, and wish the project Consortium every success in the accomplishment of the proposed work.

This document is not legally binding.

Petri Räsänen
Director, Innovation and Foresight
Tampere, 9.8.2016

Letter of Support

Prague, 15th August 2016

Dear Sirs,

This is a letter to support the H2020 project Urban Nature Labs (UNaLab) to be submitted in the call SCC-02-2016-2017: Demonstrating innovative nature-based solutions in cities.

Since 2012, the Capital City of Prague is among the registered regions of the S3 Platform based in IPTS, Sevilla. In 2014, Prague Municipal Assembly approved the Prague Regional Innovation Strategy (Prague RIS3). One of its strategic objectives is *Increasing the intensity of cooperation between the public, private and academic sectors*, where Prague intends to develop its specific position and role in undertaking and stimulating innovative activities. As municipal administration is responsible for a wide range of infrastructure and services, this project gives it an opportunity to do so in the course of its duties. H2020 allows the administration to pursue this goal with additional drive and active participation in SCC calls is mentioned in Prague RIS3 as one of suggested measures.

Therefore, as Prague RIS3 Manager, I can confirm this project is in line with the objectives of the strategy with a potential to develop the city's role in stimulating innovative activities through cooperation with foreign partners. Furthermore, should future solutions be produced in the region, it will also be in line with regional specialization domains, where IT-based solutions, smart energy and other topics pursued by the project can be found.

Best regards,

Jakub Pechlát

Regional RIS3 Manager
Head of Innovation Policy Office
IPR Prague

PREFEITURA MUNICIPAL DE PORTO ALEGRE
GABINETE DE INOVAÇÃO E TECNOLOGIA

Ofício nº. 61 / 2016 - INOVAPOA/GP

Porto Alegre, 06 de setembro de 2016.

Name: Maria Fernanda Bermudéz
Job Title: Municipal Secretary of Innovation and Tecnology
Organization: City Hall of Porto Alegre
Department of Authority: Office of Innovation and Tecnology
Address: Rua Uruguai, 155 - salas 908/909 - Centro Histórico
CEP 90010-140 - Porto Alegre, RS, Brazil

Letter of Support

for the

Urban Nature Labs (UNaLab) Project

submitted as a project proposal within the Horizon 2020 Call SCC-02-2016-2017: *Demonstrating innovative nature-based solutions in cities.*

I the undersigned, confirm on behalf of my local authority, Maria Fernanda Bermúdez our interest in the UNaLab project. We support the application and intend to work with VTT and the UNaLab consortium partners on the proposed UNalab project. Our role as a network of non-EU Follower Cities and expert advisor will be to network and share knowledge with the UNaLab project team with respect to: (i) the Brazilian Cities urban environmental concerns – specifically, the climate- and water-related challenges; (ii) the current state-of the art related to the implementation of nature-based solutions in Brazilian Cities; (iii) the Brazilian Cities view on knowledge and technology gaps; and, (iv) the Cities view on institutional and social barriers to implementation of the urban living lab for nature-based solutions co-creation process in the Brazilian context.

We understand and accept that this will involve attending UNaLab project meetings, workshops and/or demonstration events, as well as online peer-to-peer interaction to maximise knowledge sharing.

We believe that UNaLab addresses issues critical to the harmony, stability and sustainability of our member cities in relation to effective nature-based solutions to compat climate change and manage urban water resources, whilst improving city liveability. We are interested in learning from good practice across Europe, sharing the Brazilian practices, and also have a contribution to make with existing local policies and practices. We believe that the UNaLab project is in line with the goals and aspirations of our local authorities, and is consistent with the strategies of our organization.

We fully support the objectives of UNaLab and encourage the European Commission to fund this project, and wish the project Consortium every success in the accomplishment of the proposed work.

This document is not legally binding.

Maria Fernanda Bermudéz
Secretary of Innovation and Tecnology

September 6th, 2016

A-CGMA, MOD. E-1 ON-LINE

Digitally signed by sealingservice.grants.ec.europa.eu
Date: 2016.09.06 19:16:04 CEST
Reason: Acknowledgment of Receipt

This electronic receipt is a digitally signed version of the document submitted by your organisation. Both the content of the document and a set of metadata have been digitally sealed.

This digital signature mechanism, using a public-private key pair mechanism, uniquely binds this eReceipt to the modules of the Participant Portal of the European Commission, to the transaction for which it was generated and ensures its full integrity. Therefore a complete digitally signed trail of the transaction is available both for your organisation and for the issuer of the eReceipt.

Any attempt to modify the content will lead to a break of the integrity of the electronic signature, which can be verified at any time by clicking on the eReceipt validation symbol.

More info about eReceipts can be found in the FAQ page of the Participant Portal. (http://ec.europa.eu/research/participants/portal/page/faq)

EUROPEAN COMMISSION
Executive Agency for Small and Medium-sized Enterprises (EASME)

EASME B2 H2020 Environment and resources
Head of Unit

Brussels,

Miimu AIRAKSINEN
Teknologian tutkimuskeskus VTT Oy
VUORIMIEHENTIE 3
02150 ESPOO
FINLAND

Subject: Horizon 2020 Framework Programme
Call for proposals: H2020-SCC-2016-2017 (H2020-SCC-NBS-2stage-2016)
Proposal: 730052 — UNALAB
Evaluation result letter — GAP invitation letter

Dear Madam/Sir,

I am writing in connection with your proposal for the above-mentioned call.

Having completed the evaluation, we are pleased to inform you that your proposal has **passed this phase** and that the Agency would now like to start **grant preparation**.

Please find enclosed the evaluation summary report (ESR). It reflects the comments and opinion of the experts that evaluated the proposal — as endorsed by the Agency.

Invitation to grant preparation

Grant preparation will be based on the following:

1. **Proposal:** 730052 — UNALAB
2. **Topic:** SCC-02-2016-2017 — Demonstrating innovative nature-based solutions in cities
3. **Type of action:** Innovation action
4. **Project officer:** Ariana NASTASEANU
   Ariana.Nastaseanu@ec.europa.eu
   +32 22963554
   H2020 Environment & Resources

⚠ Please always use the Participant Portal messaging function (via your Participant Portal account). Do NOT contact the project officer via other means (e-mail, letter, etc) — unless explicitly asked to do so.

5. **Maximum grant amount:**

   Requested EU contribution (according to proposal): 12,768,931.75 EUR

   Maximum grant amount (proposed amount, after evaluation): **12,768,931.75 EUR**

6. **Duration of the action:** 48 months

7. **Action & budget:**

   The **description of the action (DoA)** (Annex 1 to the grant agreement) and the **estimated budget for the action** (Annex 2 to the grant agreement) must be based on the proposal submitted.

   ⚠ Please be aware that you may have to change your 'description of the action', in order to address ethics and security issues.

   ⚠ Please note that you may normally NOT make changes to the project/project budget/ consortium composition (including linked third parties). Please immediately inform the project officer (see above), if you need to make a change *(e.g. because one of the consortium members went bankrupt and can no longer participate)*.

8. **Timetable & deadlines for grant preparation**

   Submission of grant data & annexes: **4 weeks** after receiving this letter

   > Once the Agency has checked the information you have encoded, you will have **2 weeks** to submit your final version — to bring it in line with the comments of the project officer.

   Signature of the declaration of honour (DoH): **6 weeks** after receiving this letter

   Grant signature:**5 May 2017**

   ⚠ Please note that repeated **failure to respect deadlines** may lead to the **rejection of the partner/proposal**. (Lack of cooperation during grant preparation will be taken to mean that you are no longer interested in the grant).

9. **Fully electronic grant preparation via the Participant Portal**

   Please use your Participant Portal account to prepare your grant (including signature of the agreement). Do NOT contact the Agency via other means (e-mail, letter, etc) — unless explicitly asked to do so.

   Please be aware that all **linked third parties** (that are part of your proposal) must be **registered** and validated as legal entities in the Participant Portal Beneficiary Register.
   ⚠ Register them immediately, if not already done.

   Please note that some of your legal and financial **data** in the Beneficiary Register is 'read-only' and can be **updated** only by your LEAR (via your Participant Portal account on the My Organisation(s) page). During grant preparation, you will therefore be asked to **appoint a LEAR**.

Please note that the **data** (from your proposal, the Beneficiary Register or grant preparation) **may be used** by the Agency for monitoring and statistical purposes.

10. **Other information**

In addition,
The consortium is invited to reflect on the shortcomings identified in the Evaluation Summary Report (ESR) and come up with suggestions to address them in the Description of the Action (DoA) during the grant preparation phase, respecting the delays regarding time to grant.

Further adjustments to align the Description of the Action (DoA) with the Horizon 2020 rules as documented in the annotated Model Grant Agreement (aMGA), might be necessary and will be addressed during the grant preparation phase.

Please make sure all beneficiaries respond to the messages from the Research Executive Agency (REA) in order for all project participants and their respective LEARs to be validated without delay.

The Project Adviser assigned to your project will contact you shortly to discuss all issues related with the Grant Preparation.

For more information on grant preparation, *see the Online Manual on the Participant Portal*.

Please note that this letter does **NOT** constitute a **formal commitment for funding**. The final decision by the Agency will only be taken at a later stage, since it depends on the finalisation of grant preparation and the rest of the selection procedure (implying further checks, for instance, of operational and financial capacity, non-exclusion, etc).

I would be grateful if you could inform the other members of your consortium of this letter.

For any questions, please contact the project officer via your Participant Portal account.

Yours faithfully,

Arnoldas MILUKAS
Head of Unit

Enclosures: Evaluation summary report (ESR)

COMUNE DI GENOVA

E' PARTE INTEGRANTE DELLA PROPOSTA DI DELIBERAZIONE 163 0 0 N. 2017-DL-63 DEL 02/03/2017 AD OGGETTO:

ADESIONE DEL COMUNE DI GENOVA IN QUALITA' DI PARTNER AL PROGETTO EUROPEO "UNaLAB - URBAN NATURE LABS (LABORATORI DI NATURA URBANA)" NELL'AMBITO DEL PROGRAMMA EUROPEO "HORIZON 2020" CALL: SMART AND SUSTAINABLE CITIES -SCC-02-2016-2017: DEMONSTRATING INNOVATIVE NATURE-BASED SOLUTIONS IN CITIES (topic SCC-02-2016-2017 type of action IA)

PARERE TECNICO (Art 49 c. 1 D.Lgs. 267/2000)
Si esprime parere favorevole in ordine alla regolarità tecnica del presente provvedimento

08/03/2017

Il Direttore
Dott.ssa G. PESCE

08/03/2017

Il Dirigente
Dott.ssa Anna Iole CORSI

Documento Firmato Digitalmente

COMUNE DI GENOVA

ALLEGATO AL PARERE TECNICO
ART. 7, COMMA 3, REGOLAMENTO DI CONTABILITA'

CODICE UFFICIO: 163 0 0	**DIREZIONE PIANIFICAZIONE STRATEGICA, SMART CITY, INNOVAZIONE D'IMPRESA E STATISTICA**
Proposta di Deliberazione N. 2017-DL-63 DEL 02/03/2017	

OGGETTO: ADESIONE DEL COMUNE DI GENOVA IN QUALITA' DI PARTNER AL PROGETTO EUROPEO "UNaLAB - URBAN NATURE LABS (LABORATORI DI NATURA URBANA)" NELL'AMBITO DEL PROGRAMMA EUROPEO "HORIZON 2020" CALL: SMART AND SUSTAINABLE CITIES -SCC-02-2016-2017: DEMONSTRATING INNOVATIVE NATURE-BASED SOLUTIONS IN CITIES (topic SCC-02-2016-2017 type of action IA)

a) La presente proposta di deliberazione **comporta l'assunzione di impegni di spesa** a carico del bilancio di previsione annuale, pluriennale o degli esercizi futuri?

SI [X] NO [ ]

Nel caso di risposta affermativa, indicare nel prospetto seguente i capitoli di PEG (e gli eventuali impegni già contabilizzati) ove la spesa trova copertura:

Anno di esercizio	Spesa di cui al presente provvedimento	Capitolo	Impegno Anno	Impegno Numero
	* vedi note			

b) La presente proposta di deliberazione **comporta una modifica delle previsioni** di entrata o di spesa del bilancio di previsione annuale, pluriennale o degli esercizi futuri?

SI [X] NO [ ]

Nel caso in cui si sia risposto in modo affermativo alla precedente domanda b) compilare il prospetto seguente:

Anno di esercizio	Capitolo	Centro di Costo	Previsione assestata	Nuova previsione	Differenza + / -
* vedi note					

Documento Firmato Digitalmente

c) La presente proposta di deliberazione **comporta una modifica dei cespiti inventariati o del valore della partecipazione** iscritto a patrimonio?

SI ☐ NO ☒

Nel caso in cui si sia risposto in modo affermativo alla precedente domanda c) compilare il prospetto seguente (per i cespiti ammortizzabili si consideri il valore ammortizzato):

Tipo inventario e categoria inventariale	Tipo partecipazione (controllata/ collegata o altro)	Descrizione	Valore attuale	Valore post-delibera

d) La presente proposta di deliberazione, ove riferita a società/enti partecipati, è coerente con la necessità di assicurare il permanere di condizioni aziendali di solidità economico-patrimoniale dei medesimi, in relazione agli equilibri complessivi del bilancio dell'Ente?

SI ☐ NO ☐

Nel caso in cui si sia risposto in modo negativo alla precedente domanda d) compilare il prospetto seguente:

Effetti negativi su conto economico	

(*) Osservazioni del Dirigente proponente: In relazione agli interventi di cui al presente provvedimento sarà proposto specifico adeguamento al Programma Triennale dei Lavori Pubblici 2017-2018-2019 ed al Bilancio di previsione.

Genova, 08/03/2017

Il Direttore
Dott.ssa G. PESCE

Genova, 08/03/2017

Il Dirigente
Dott.ssa Anna Iole CORSI

Documento Firmato Digitalmente

COMUNE DI GENOVA

E' PARTE INTEGRANTE DELLA PROPOSTA DI DELIBERAZIONE 163 0 0 N. 2017-DL-63 DEL 02/03/2017 AD OGGETTO: ADESIONE DEL COMUNE DI GENOVA IN QUALITA' DI PARTNER AL PROGETTO EUROPEO "UNaLAB - URBAN NATURE LABS (LABORATORI DI NATURA URBANA)" NELL'AMBITO DEL PROGRAMMA EUROPEO "HORIZON 2020" CALL: SMART AND SUSTAINABLE CITIES -SCC-02-2016-2017: DEMONSTRATING INNOVATIVE NATURE-BASED SOLUTIONS IN CITIES (topic SCC-02-2016-2017 type of action IA)

PARERE REGOLARITA' CONTABILE (Art. 49 c. 1 D.Lgs. 267/2000)
Ai sensi e per gli effetti dell'art. 49 - comma 1 - T.U. D.lgs 18 agosto 2000 n. 267 si esprime parere favorevole in ordine alla regolarità contabile del presente provvedimento.

08/03/2017

Il Dirigente Responsabile
[Dott. Giovanni Librici]

Documento Firmato Digitalmente

COMUNE DI GENOVA

E' PARTE INTEGRANTE DELLA PROPOSTA DI DELIBERAZIONE 163 0 0 N. 2017-DL-63 DEL 02/03/2017 AD OGGETTO: ADESIONE DEL COMUNE DI GENOVA IN QUALITA' DI PARTNER AL PROGETTO EUROPEO "UNaLAB - URBAN NATURE LABS (LABORATORI DI NATURA URBANA)" NELL'AMBITO DEL PROGRAMMA EUROPEO "HORIZON 2020" CALL: SMART AND SUSTAINABLE CITIES -SCC-02-2016-2017: DEMONSTRATING INNOVATIVE NATURE-BASED SOLUTIONS IN CITIES (topic SCC-02-2016-2017 type of action IA)

ATTESTAZIONE COPERTURA FINANZIARIA (Art. 153 c. 5 D.Lgs. 267/2000)
Si rinvia a successivi atti, previa iscrizione delle poste contabili nei documenti previsionali e programmatici.

08/03/2017

Il Direttore di Ragioneria
[Dott. Giovanni Librici]

Documento Firmato Digitalmente

COMUNE DI GENOVA

E' PARTE INTEGRANTE DELLA PROPOSTA DI DELIBERAZIONE 163 0 0 N. 2017-DL-63 DEL 02/03/2017 AD OGGETTO: ADESIONE DEL COMUNE DI GENOVA IN QUALITA' DI PARTNER AL PROGETTO EUROPEO "UNaLAB - URBAN NATURE LABS (LABORATORI DI NATURA URBANA)" NELL'AMBITO DEL PROGRAMMA EUROPEO "HORIZON 2020" CALL: SMART AND SUSTAINABLE CITIES -SCC-02-2016-2017: DEMONSTRATING INNOVATIVE NATURE-BASED SOLUTIONS IN CITIES (topic SCC-02-2016-2017 type of action IA)

PARERE DI LEGITTIMITA' DEL SEGRETARIO GENERALE **(Ordinanza Sindaco n. 419 del 1.12.2016)**
Si esprime parere favorevole in ordine alla legittimità del presente provvedimento

08/03/2017

Il Segretario Generale
[Avv. Luca Uguccioni]

Documento Firmato Digitalmente