



**URBAN GreenUP**

**D1.15: First Methodology Validation (Plan)**

***WP 1 , T 1.10***

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**Versions**

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## 0 Abstract

The aim of this report is to provide a useful guide to the validation methods of the URBAN GreenUP methodology for the Renaturing Urban Planning concept (RUP). It incorporates the validation proposal to the urban planning aspects directly related the NBS, as a part of the Sustainable Urban Planning (SUP), but also to the processes on implementation of one or a set of NBS in a specific area of the city. Finally, the aim is to deliver the valuable and realistic methodology.

The document explains the GreenUP methodology validation principles and presents its possible methods and focus. In continuation, it provides the validation specific concept definition and includes the descriptions of the main activities improved. The validation proofs the URBAN GreenUP methodology processes proposed and specifies the most important components. It also proposes the validation Committee, linking this one to the activities on methodology social aspects, in continuation improving the same all methodology replication aspects given.

**\*The report to the URBAN GreenUP methodology, continuously updated with new project outcomes related the validation, delivering at the end of the project the document fully described by methodology validation steps, analysis, results, lessons learnt, and impact graphs.**

**\*At this stage of the project (M20), the report D1.15 draft version corresponds only to the base proposition to the validation method. The first validation, the report D1.16, refers to the internal check by project partners, to be performed during the next project stage using one of the project meeting/ workshop (M40); the final and external validation involves the external public, and will be performed once the project methodology is fully defined in D1.17 (M60).**





## 1 Introduction

### 1.1 What is the GreenUP methodology validation?

The URBAN GreenUP methodology is a holistic and complex process, the systematic strategy to reach high level of impacts for climate change mitigation and efficient water management, takes into account a numerous and complex process analysis that are linked between them. The prioritization of the processes, and all aspects related to them, are not always easy to be considered by one singular team of developers.

The validation works in this case as a kind of the “methodology certification”, proving its high quality and accuracy of all contents, technical, logistic components, and workflow between them. In order to validate the URBAN GreenUP methodology, and to improve its value, different validation activities are considered during the methodology development process.

### 1.2 What is the focus of the GreenUP validation?

URBAN GreenUP aims at the development of a methodology to support the re-naturing of cities increasing the capabilities of local authorities and stakeholders to reach a better implementation of NBS as main priority to mitigate the effects of climate change. The methodology process developments contains the validation focussing on its main levels of development:

- Assist to co-develop the **Renaturing Urban Plans (RUPs)** on harmonization and systematization of existing information, creation of procedures to consider not only individual solutions but also integrated approaches going further than technical issues considering as well social and economic aspects as essential to achieve high impact.
- Supporting **co-implementation of NBS** in specific areas, that requires support guidelines, procedures and tools, in order to guarantee that the selected solutions are appropriate on the basis of a predefined expected impact.

The methodology will be conceived as a collaborative strategy, supporting the stakeholder’s engagement, from the initial diagnosis to the NBS deployment and evaluation, following innovative co-creation and open innovation strategies. Those same actors are going to be involved during the methodology validation process.

In addition, a set of advanced techniques will be used to assess the impact of the interventions, using the main Key Performance Indicators (KPIs) and rigorous evaluation procedures, paying special attention to get maximum social engagement and acceptance. It is foreseen that the follower cities (Mantova, Ludwigsburg, Quy Nhon, Chengdu and Medellin) will validate this methodology developing their own RUPs and integrating them in the City Strategic Urban Planning. The front-runner cities (Valladolid, Liverpool and Izmir) will validate the second level of the methodology, implementing several pilots of integrated NBS in a large scale demonstration action focused on contributing to the main city challenges.



### 1.3 Crucial Methodology Components for Validation

As due to the methodology diagram, as presented in the draft document D1.12 Methodology, some crucial methodology processes are indicated for their validation. The crucial components are referring to the main analysis processes, where the processes are considered as a result, and those are the methodology diagnosis (T1.3), evaluation method (T1.6), legal guide (T1.7), evaluation guide for replication (T1.8).

The rest of components, like catalogues and guides, may be validated once finalized the first project implementations, and the importance of accuracy of the measures adopted is evaluated. The whole process should give an answer of methodology real value, its proposed processes, and to include all correcting measures defined during the validation.

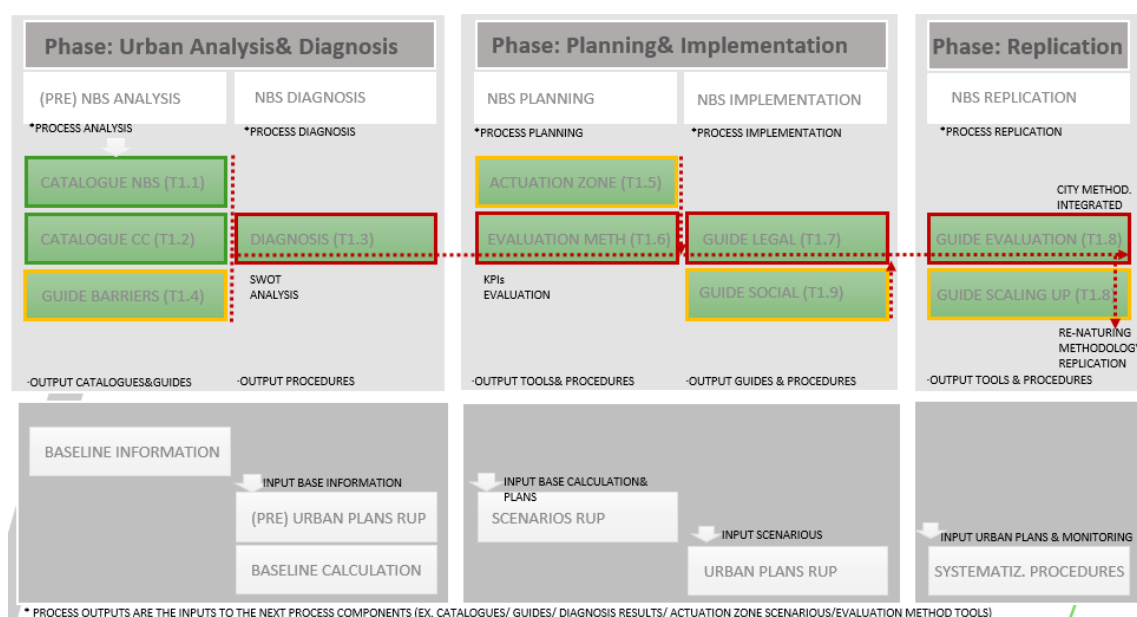


Figure 1.1: URBAN GreenUP methodology structure and validation needs

### 1.4 Connexions of Methodology Validation Process

The project activities linked to the WP1 validation activities, as presented below, contribute significantly to the results of the validation. Those are the activities of Demo Pilots, and the results presented after the project implementation, as well as the initial evaluation strategy integrated into each demo, and the replication processes proposed after that.

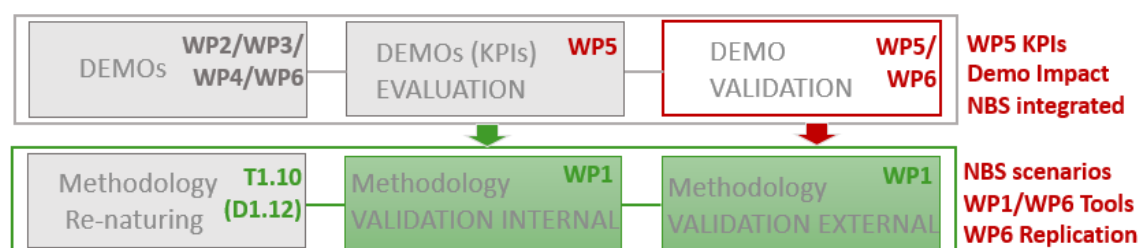


Figure 1.2: URBAN GreenUP activities structure vs validation needs

**The first validation** of the methodology will be done by the partners of the URBAN GreenUP Project, the processes will be sub-divided in two steps corresponding the level of the methodology development (M20 and M40), and the results will allow gathering of the information that will improve the methodology at its conceptual level.

First Stage of the methodology contemplate the integration among the results of Tasks 1.1, Tasks 1.2, Task 1.5, and Task 1.9 with the target of articulating the results of the investigations developed in these tasks, cross the information generated, and take advantage of the results which will avoid misunderstanding that could generate confusion on the methodological processes.

- Methodology at first Step, the first diagram to the methodology proposed, taking into account its different components to be developed (WP1). The components at this phase are, NBS Catalogue (T1.1), CC Catalogue (T1.2), and Guide on Barriers and Opportunities (T1.5), linking them strategically to the rest of the methodology concepts like Actuation Zone, Evaluation Method, Social, Legal, and some Replication and Scaling up aspects from the rest of the WP1 tasks. The results of the analysis are included in the present document D1.12.
- Methodology at Second Step, in continuation of the D1.12 with the aim of extending and improving it, specifying the rest of the components on Diagnosis and Baseline (T1.3), Guide on Barriers and Opportunities (T1.4), City Zoning (T1.5), NBS Scenarios (T1.6), Tendering Process (T1.7), Co-creation and Co-developments (T1.9), are included into the results of D1.13 (extended D1.12).

**The second validation**, carried out by the external stakeholders, it will take into account the methodology improved at methodological level, and complemented with the detailed annexes according to the procedures. The external stakeholders in this case, can provide feedback from different points of view, allowing getting conclusions about qualitative and quantitative values, obtaining them to increase the replication potential of the methodology. The results from monitoring are available at this step; the analysis according to the accuracy of the NBS selection and integration is an option to be included during the second validation.

- Methodology at third and Last Step, the total integration of all previous components with the last Replication one (T 1.8), delivering results in D1.14 (extended D1.13).



## 1.5 Definition of Methodology Concepts

**Methodology Validation** - kind of “methodology certification” considered during the URBAN GreenUP methodology validation

**Re-naturing City Methodology** – methodology for supporting the Re-naturing of the cities and/or areas, that will include new concepts as Re-naturing Urban Plans RUPs that will let embrace the climate change challenges.

**NBS – Nature Base Solutions** - can provide a multitude of benefits that influence human health, lifestyle and well-being, can improve air quality, minimize heatwaves, act as carbon stores, help on mitigation of climate change, reduce flooding disasters overcoming the adaptation to climate change and be an important habitat for wildlife.

**RUP – Re-naturing Urban Plans** – which incorporates the urban planning aspects directly related to nature-based solutions as major strategy to fight against climate change. It will be part of the Sustainable Urban Planning and totally integrated with the urban strategy for dealing with the main city challenges.

**Methodology Component** – All components needed for methodology developments, those could be activities, but also, catalogues, guides, decisions

**Methodology Processes** – methodology activities that analyse/ define/ evaluate the methodology concept, and create corresponding outputs, in many cases, based also on inputs from different activities

**Methodology Procedure** – methodology output related to the systemized step-by-step activity for Re-naturing Methodology Implementation

**Input** – Information coming from other project process, or external, not developed in project but needed for methodology definition

**Output** – Information created in project process, could be an input to other project process

**Work Flow** – relation between different project processes and components, also indicates the correct direction of the methodology implementation



## 2 GreenUP methodology validation process

### 2.1 Methodology Validation Overview

The objective of this methodology process is to define the principles of the Validation Method for URBAN GreenUP methodology, and to apply the correct measures for its design and implementation concepts.

The Validation Process will guarantee the methodology high value and accuracy of the processes integrated, allowing the successful City Planning RUP and the NBS smooth implementation and maintenance, contributing to the Climate Change Challenge of the Cities.

**Process Component:** Validation Method for URBAN GreenUP Methodology

**Process Action:** Analysis and evaluation method proposal to the City Methodology Selected.

The URBAN GreenUP Validation Method, as a base guide to the City evaluation method, composed by different levels of analysis and working in an integrated way solving various problems on city methodology maintenance and replication.

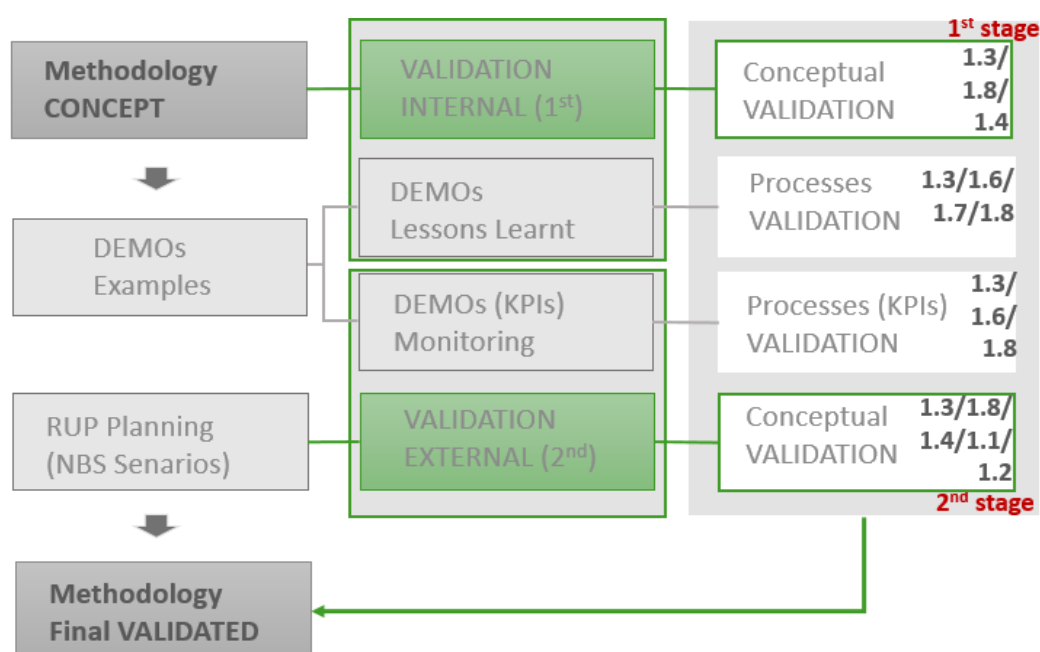


Figure 2.1: URBAN GreenUP Methodology Validation Components

- **At conceptual level**, where the Urban GreenUP methodology is developed as a modular procedure, the validation will be introduced taking into account the view from different angles, stakeholders, methodology steps, and different stage on development.

- **At implementation level**, a large scale and fully replicable demonstration actions of NBS accompanied by innovative business models will provide evidences about the benefits of NBS contributing to the creation of new market opportunities for European companies, and fostering citizen insight and awareness about environmental problems. Three European cities will act as followers to strengthen the replication potential of the results (Ludwigsburg and Mantova) and finally three non-European cities (Medellin, Chengdu and Quy Nhon) will allow to identify the market opportunities for European companies out of Europe and fostering the European leadership in NBS implementation at global level.
- **Finally, the integration** between the lessons learnt during the demo process, the results from the validation method procedures (internal and external), all will give the final product on systematized and validated URBAN GreenUP methodology, close to real and different European cases, situation, characteristics, legal and economic situation between the other aspects considered.

## 2.2 Methodology Validation Method

The main objective of URBAN GreenUP is the demonstration of an innovative methodology to renaturing cities through piloting different actions, considering advanced technologies towards the adaptation of the cities to fight against the climate change. The methodology that will be developed and validated will foster the replication of the foreseen actions, at different levels, in the follower cities during the project lifetime. At the same time, the methodology validation should be focused on the processes associated to those key elements of the approach:

- **Analysis Discussion**, to the methodology Diagnosis and Evaluation processes. To perform a good decision, the first approach is to identify the problem. A city needs requirement process will be followed. In all this process, the active participation of the citizens will be assured. (workshops, meetings)
- **Lessons Learnt**, through the reports of the key stakeholders. Industry partners are essential as technology and solutions providers. The validation process, apart from industry, will include SMEs, starts-ups and entrepreneurs, but citizens as well along this process to fulfil a shared goal following a collaborative approach. (Questionnaires)
- **Demo Experience**, through the demo cases in Valladolid, Liverpool and Izmir. All the technology-based actions, together with the business models and public procurement schemes, are going to be validated. (RUP reporting)
- **Analysis Discussion**, to the methodology Evaluation and Replication at EU level. All interventions will be evaluated through rigorous measurement protocols, monitoring programs and evaluation plans to assess the performance of the solutions envisaged. All these analysis taken from technical perspective, but also economical assessment to assess the bankability of the proposed technologies.

All validation methods will follow the methodology structure, and a logical process of development, demonstration and validation and refinement of the renaturing methodology.



## 2.3 Methodology Validation Process

The goal of this part is to discuss and validate the developed methodology, during a systemic process, and involving the relevant stakeholders. The ambition is to provide the deepest and most extensive coverage of expertise and both theoretical and empirical based improvements.

Firstly, the methodology is validated at qualitative level (theoretical) and then, after the demo execution and evaluation phase, in a quantitative level (empirical).

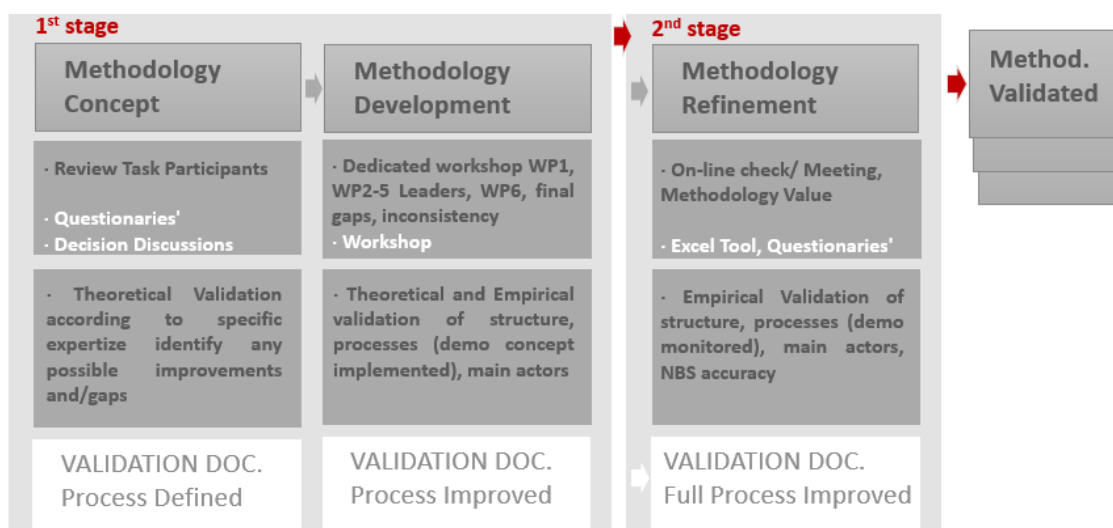


Figure 2.2: URBAN GreenUP Methodology Validation Components

**The first internal stage** corresponds to Methodology Concept, both theoretical and then empirical validation, divided in two sub-processes on Methodology Concept and Development.

- **Methodology Concept Validation:** the activity consist on reviewing of the draft methodology version in terms of its structure, processes and workflow between different activities and inputs/outputs generated. The objective is to identify the methodology gaps/inconsistences and to apply the adjustments needed. The method used in this phase are questionnaires' and discussions during the regular project calls and meetings. The evaluators are going to be the WP1 Tasks Participants.
- **Methodology Development Validation:** the activity consist on reviewing of the draft methodology version in terms of its structure, processes and workflow but alimented in addition with the lessons learnt from the demonstration process of design and implementation. The objective is to improve the methodology process, and to detail all its processes and documentation. The method used in this phase is the workshop between different projects WPs. The evaluators are going to be the leaders of the representatives sectors (authorities, industrial, innovation, decision makers...), selected between the project partners.

The **second external stage** corresponds to Methodology Concept Fully Designed, where process annexes are developed and the demo results from NBS implementations available, indicated as Methodology Refinement. The evaluators in this case are going to be external stakeholders of the project, or other identified as relevant to the URBAN GreenUP Project (SmartCities Leaders, Citizens).

## 2.4 Methodology Validation Reporting

The background of the methodology developed is to be validated by several experts, at both stages defined. Two main outputs to be generated, according to the validation stage and level of the development of the methodology:

- URBAN GreenUP Methodology Validated at Conceptual and Development Level (Annex to the present planning document, D1.15 First Methodology Validation)
- URBAN GreenUP Methodology Validated in All its aspects (D1.16 Second Methodology Validation)

The methods selected for validation as listed below:

- **Project Meetings Validation Sessions, Calls:** During the project WPS1, regular monthly calls, there will be discussed and concluded the validation aspects. The voting will decide on methodology final format.
- **Project Workshop:** The WP1 validation workshop will decide on methodology crucial aspects. The workshop will include the exercise activities, brainstorming, decision voting.
- **Accuracy questionnaires:** The key questions summaries prepared, containing list of question and answers voted or evaluated, in reference to the Methodology Concept, Lessons Learnt according to Demo Design, Lessons Learnt according to the Demo Implementation.
- **Experiences Reports Demo Evaluation (KPIs):** on-line questionnaires, or/and telephone questionnaire in reference to the demo evaluated (KPIs) and their impact as well as demo Interventions (Public Votes).

In the present document, some key questions methodology aspects have been listed, with the objective to guide the validation improvement of the methodology accuracy and value. After every validation stage, as a result, the additional inputs and comments are to be included into the methodology descriptions and structure.





Table 2.1: Key Questions Aspects List – Validation 1<sup>st</sup> Stage – Methodology Concept**1st Stage - Internal****Methodology Concept**

· Output: Validation Document to Method. Process Defined

Methodology Components to be Validated	Method/Doc	Evaluators
<b>·General Structure</b>		
<ul style="list-style-type: none"> <li>.. Components Missing, to be Delayed</li> <li>.. Processes Considered</li> <li>.. Processes Inputs Accuracy</li> <li>.. Processes Outputs Accuracy</li> <li>.. Methodology Workflow</li> <li>.. Other</li> </ul>	Questionnaires/ Discussion/ Decisions	WP1 Task Leaders, WP1 All
<b>·Gaps Identification and Possible Improvements</b>		
<ul style="list-style-type: none"> <li>.. Conceptual and Structure</li> <li>.. Graphic, Names and Processes Systemized</li> <li>.. Other</li> </ul>	Questionnaires/ Discussion/ Decisions	WP1 All
<b>·Partner Role Identification</b>		
<ul style="list-style-type: none"> <li>.. Processes vs Roles</li> <li>.. Missing Roles</li> <li>.. Management Structure</li> <li>.. Other</li> </ul>	Questionnaires/ Discussion/ Decisions	WP1 All
<b>·Validation Process and Workshop Objectives Results</b>		
<ul style="list-style-type: none"> <li>.. Pending Aspects for next stage validation</li> <li>.. Main Actors</li> <li>.. Other</li> </ul>	Questionnaires/ Discussion/ Decisions	WP1 All



Table 2.2: Key Questions Aspects List – Validation 1<sup>st</sup> Stage – Methodology Development

<b>Methodology Development</b>		
<b>·Validation Document Methodology Process Improved</b>		
<b>Methodology Components to be Validated</b>	<b>Method/Doc</b>	<b>Evaluators</b>
<b>· Main Aspects of Methodology to be Improved</b>		
<ul style="list-style-type: none"> <li>.. Components Missing, to be Delayed</li> <li>.. Sub-Processes Considered</li> <li>.. Sub-Processes Inputs Accuracy</li> <li>.. Sub-Processes Outputs Accuracy</li> <li>.. Processes and Sub-Processes Detailed Workflow</li> <li>.. Methodology Tools Considered</li> <li>.. Other</li> </ul>	Workshop Exercise/ Discussion/ Voting	WP1, WP2-5, WP6
<b>· Restructure the Methodology Workflow</b>		
<ul style="list-style-type: none"> <li>.. Demo Design Aspects Lessons Learnt</li> <li>.. Demo Implementation Aspects LL</li> <li>.. Demo Legal Construction Aspects LL</li> <li>.. Demo Economic Aspect LL (Catalogues NBS)</li> <li>.. Demo Evaluation Aspects LL (KPIs NBS Considered)</li> <li>.. Demo Evaluation Aspects LL (CC considered)</li> <li>.. Other</li> </ul>	Workshop Exercise/ Discussion/ Voting	WP1, WP2-5, WP6
<b>·Main Actors Identification</b>		
<ul style="list-style-type: none"> <li>.. Demo Replication Aspects (Social Involvement)</li> <li>.. Other</li> </ul>	Workshop Exercise/ Discussion/ Voting	WP1, WP2-5, WP6
<b>· Restructure the Methodology Phasing (Demo)</b>		
<ul style="list-style-type: none"> <li>.. Tendering Models</li> <li>.. Organisational Models</li> <li>.. Business Models</li> <li>..Other</li> </ul>	Workshop Exercise/ Discussion/ Voting	WP1, WP2-5, WP6

Table 2.3: Key Questions Aspects List – Validation 2<sup>nd</sup> Stage – Methodology Refinement**2nd Stage - External****Methodology Refinement****· Validation Document Full Process Improved**

Methodology Components to be Validated	Method/Doc	Evaluators
· Main Aspects of Methodology to be Improved		
·· Components Specification	On-line/Telephone Questionnaires/ Dissemination Meeting	Citizens, Craft People, Smart Cities Experts
·· Sub-Processes Specification		
·· Sub-Processes Inputs Specification		
·· Sub-Processes Outputs Specification		
·· Detailed Workflow Specification		
·· Tools Considered Specification		
·· Other		
· Restructure the Methodology Workflow		
·· Demo Evaluation Aspects LL (Catalogues NBS)	On-line/Telephone Questionnaires/ Dissemination Meeting	Citizens, Craft People, Smart Cities Experts
·· Demo Evaluation Aspects LL (Implementation Problems)		
·· Demo Evaluation Aspects LL (Replication Opportunities)		
·· Other		
·Main Actors Identification		
·· Demo Replication Aspects (Social Involvement)	On-line/Telephone Questionnaires/ Dissemination Meeting	Smart Cities Experts
·· Other		
· Restructure the Methodology Phasing (Demo)		
·· Tendering Models	On-line/Telephone Questionnaires/ Dissemination Meeting	Smart Cities Experts
·· Organisational Models		
·· Business Models		
··Other		

## 2.5 Methodology Validation Committee

At **first stage** of internal validation, the project partners and experts in different disciplines, which will take part in validation process.

- **Cities public authorities** are the main actors, assuming mayor responsibilities and workload according their commitment. Front-runners (Valladolid, Liverpool and Izmir) are cities advanced in Green Infrastructure and renaturing strategies, as an authority and expert to legalisation issues, will provide comments to those matters at regional but also European level.  
Five followers cities, with a very good geographical, social, economic and climatic complementarity, acting as a followers (Mantova, Ludwigsburg, Medellin, ChengDu and Quy Nhon), will provide comments to the processes on replication plan and particular challenges for those regions.
- **European Industry**, big companies and SMEs involved as representative, Acciona, Singular Green and GMV in Spain, DEMIR and Bitnet in Turkey and Community Forest in UK represent all together the main targeted expertise, will ensure the validation of the renaturing ecosystems at local levels and functionality of the main methodology processes. CHD, as a main body managing water issues in Valladolid, what will provide high expertise in water challenges.
- **Knowledge entities**, CARTIF, CENTA, Univ. of Liverpool, Ege Univ, Izmir Institute of Tech, Leitat, U.Bocconi, RMIT and SPI, will provide an expertise from technical implementation to the evaluation processes.

At **second stage** of external validation, the project non-linked partners are going to be defined to evaluate the main processes of the methodology, and to propose the improvements of their main catalogues and guides.

- **City methodology experts**, smart city projects like Remourban, Cityfied, Smartencity, R2Cities...other potential Smarcity Projects or platforms
- **Citizens**, public view to the actions of URBAN GreenUP in their city

The Front-runner and Lighthouse cities, as the main methodology clients, will confirm the final methodology value and accuracy as well.

## 2.6 Methodology Validation Results

The first validation refers to the internal check by project partners, to be performed during the next project stage using one of the project meeting/ workshop (M40), the second external validation involves the external public, and will be performed once the project methodology is fully defined (M60).

By month M20, the discussion to the validation procedures is still on-going.



### 3 Conclusions

The document explains the GreenUP methodology validation principles and presents its possible methods and focus. In continuation, it provides the validation specific concept definition and includes the descriptions of the main activities improved. The validation proves the URBAN GreenUP methodology processes proposed and specifies the most important components. It also proposes the validation Committee, linking this one to the activities on methodology social aspects, in continuation improving the same all methodology replication aspects given.

**The first internal stage** corresponds to Methodology Concept, both theoretical and then empirical validation, divided in two sub-processes on Methodology Concept and Development.

**The second external stage** corresponds to Methodology Concept Fully Designed, where detailed process annexes are developed and the demo results from NBS implementations available, indicated as Methodology Refinement. The evaluators in this case are going to be external stakeholders of the project, or other identified as relevant to the URBAN GreenUP Project (SmartCities Leaders, Citizens).

The methods selected for validation as listed below:

- Project Meetings Validation Sessions, Calls and Workshops.
- Accuracy Questionnaires' Methodology Concept.
- Lessons Learnt Questionnaire' Demo Design.
- Lessons Learnt Questionnaire' Demo Implementation.
- Experiences Reports Demo Evaluation (KPIs).
- Accuracy Reports Interventions (Public Votes).

During the validation process, the questions to the key aspects list been developed, with the objective to guide the improvement of the methodology accuracy and value. As a result, the additional inputs and comments are to be included into the methodology descriptions and structure.

The report to the URBAN GreenUP methodology is going to be continuously updated with new project outcomes related to the validation, delivering at the end of the project the document fully described by methodology validation steps, analysis, results, lessons learnt, and impact graphs. At this stage of the project (M20), the report D1.15 draft version corresponds only to the base proposition to the validation method. The first validation, the report D1.16, refers to the internal check by project partners, to be performed during the next project stage using one of the project meeting/ workshop (M40); the final and external validation involves the external public, and will be performed once the project methodology is fully defined in D1.17 (M60).

