LOCAL INNOVATION SCREENING TOOL (LIST):
An innovation pathway for the NbS implementation process

CLEVER CITIES PROJECT

CLEVER Cities Project (CLEVER) primarily aims to regenerate some deprived urban districts by implementing different types of solutions through a co-creation process. **Innovation** is a core element in CLEVER, which is integrated in different activities and steps of the Nature-based Solution (NbS) implementation and co-creation processes. The term *Innovation* is used to broadly refer to **new ideas or methods that are able to be turned into value**.

INNOVATION

The CLEVER framework for innovation aims to capitalise on synergies between the NbS interventions (monitoring, management, methods and materials) and local capacities (place, people, platforms, prosperity). These elements are outlined through a grid, within which new innovations may emerge in the interventions-capacities intersections

As such, CLEVER pursues the idea that **innovation is present both in the technology of the NbS, as well as in their co-creation process**. By bringing these opportunities to light, the framework allows for the identification of those specific actions where innovation may emerge.

The innovation criteria to be evaluated are not always considered `absolute´ (i.e., never previously implemented), but are mostly to be considered `relative´. Relative innovation may be either a novelty defined against a more conventional solution used until then, or a transfer of the implementation of an idea from a different place, as long as it has never been applied earlier for integration of NBS into urban regeneration.

LIST – THE EVALUATION WEBTOOL

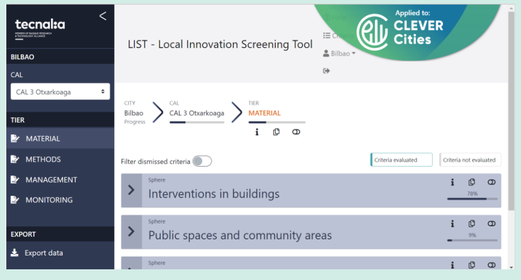
The *Local Innovation Screening Tool* (LIST) is a webtool developed by TECNALIA, adapted and applied to CLEVER, whose goals are twofold:

- to **identify the innovation pathway along the timespan of the project** in terms of NbS implementation, considering aspects such as Materials, Methods, Monitoring, and Management;
- to **provide inspiration and knowledge about different types of innovation along the NbS co-created process for the implementation** (i.e., co-creation, co-design, co-implement, co-monitoring, co-maintenance).

In CLEVER, LIST gives support to its Frontrunner-Cities moving towards a new and significantly improved urban regeneration through NbS implementation (London, Milan, Hamburg), that responds to four challenges: Human health and well-being; Sustainable economic prosperity; Social cohesion and Environmental justice; and Citizen security. It also aids Fellow-Cities (Malmo, Madrid, Larissa, Belgrade, Sfântu Gheorghe, Quito) to create value considering innovation in the process of NbS ideation and their future action plans.

LIST is based on an innovation pathway assessment from the technological, economic, social, and legal viability points of view, emerging as result of a reflection process within each city. For that, both Ex-Ante and Ex-Post evaluation are taken place, counting on associated functionalities embedded in the tool. The innovation covers three different evaluations: **Innovation Readiness Level (IRL), the Innovation Model, and the Viability for implementation**.

LIST webtool interface



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CONTENT STRUCTURE

To facilitate the identification of the innovation pathway, LIST is based on a set of **pre-established criteria, organized in four hierarchical levels: Tiers, Spheres, Components, and Criteria.** The almost 150 criteria included were initially elicited from project partners, to be later defined and crystallized by a group of experts, and followed by an in-depth review process supported by different professionals. This innovation framework is indeed **the biggest value of the LIST**.

INNOVATION MODEL

There are four types of innovation models considered in LIST:

1) Application of existing innovative solutions or processes/methods into **new context (spatial/ sectoral).**

2) **Upgrading for improvement the functionality of existing innovation**: significantly improved NBS (good or service) or implementation process.

3) **Combination and/or integration of existing innovative solutions** resulting in a new one: significantly improved NBS (good or service) or implementation process.

4) Application of **completely new solution or approach**.

INNOVATION VIABILITY

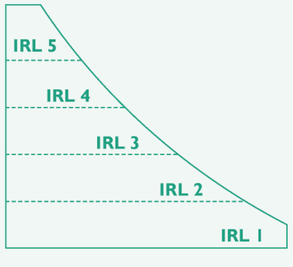
The assessment of the Innovation in terms of viability is important, since an innovation which implementation is not possible, or extremely complicated, does not provide value in itself.

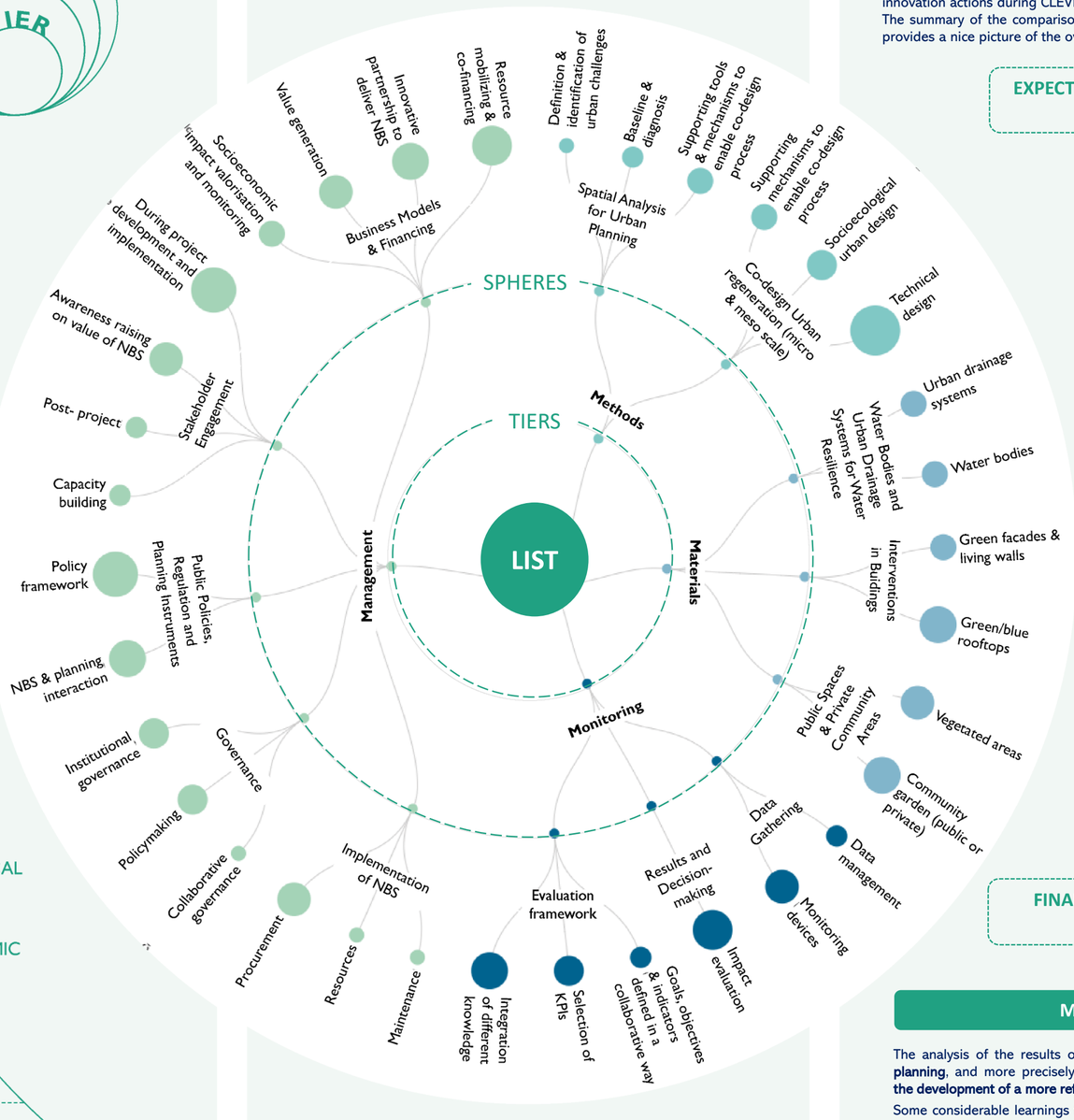
This assessment has been considered at the process level, taking into account **four types of viability: Social, Legal, Technical, and Economic**, and establishing a scale of three levels of viability, low, medium or high.

INNOVATION READINESS LEVEL (IRL)

It refers to the degree of innovation of the solutions, in technological terms, which is summarised in five levels:

- IRL 5: Operational
- IRL 4: Applied in specific environments
- IRL 3: Demo/pilot
- IRL 2: Conceptual
- IRL 1: Not yet considered





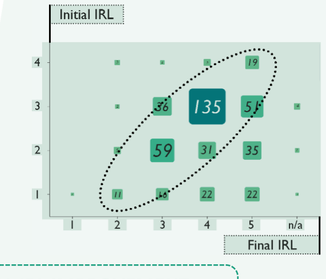
ANALYSIS OF RESULTS (EX-ANTE AND EX-POST)

After concluding an ex-ante and an ex-post analysis, some relevant questions are automatically answered, e.g. What kind of innovation was considered?, What were the challenges behind why some innovation could not be implemented, although expected?, Which spheres have pictured the most innovation actions during CLEVER Cities?.
The summary of the comparison of the expected and real IRL improvements provides a nice picture of the overall innovation pathway.

EXPECTED IRL IMPROVEMENT (EX-ANTE)

Many of the expected IRL improvement **were fulfilled** by the end of the CLEVER according to the initial expectations, evolving an average of one or two levels (coherent and realistic given the duration of the project).

Some criteria have surpassed the expectations, increasing their IRL by more than two levels. However, results have to be interpreted carefully, since they may be a result of the cities being too cautions on their expectations, that challenges along the project have prevent the innovation to happen (pandemics), maturity of LIST, etc..



FINAL IRL IMPROVEMENT (EX-POST)

MAIN MESSAGES

The analysis of the results offer **valuable insights to directly inform urban planning**, and more precisely, **to contribute to the replication strategy and the development of a more refined NbS action plan**.

Some considerable learnings fostered by LIST are to: **identify the innovation opportunities in advance**, be able to **redesign a more innovative technical proposal**, know **options on how to nurture co-creation**, boost the **benefits of NbS**, **improve policies**, **identify gaps** to complete research agendas, recognize **possibilities of optimising resources**, **support the preservation of the biodiversity and provision of ecosystem services**, among others.

Particularly for CLEVER, these learnings may contribute to **improve the urban regeneration in deprived areas**, promoting a more sustainable societal transformation.