



Guide to prefeasibility matrix compilation

Methodological notes supporting the PDCA toolbox - Preliminary Feasibility Studies

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Methodological note: guide to prefeasibility matrix compilation

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Introduction

This document provides a methodological framework for collecting and evaluating information on bio-waste management and soil improvement innovations under the BIN2BEAN project. As decision-makers and municipal authorities evaluate new solutions to drive regenerative soil systems, a structured approach is essential to compare disparate technologies on equal grounds. This guide supports qualitative data gathering to help key stakeholders systematically assess potential innovations before committing to resource-intensive testing or implementation.

Scope

The primary objective of this guide is to establish a standardized, transparent procedure for conducting preliminary feasibility studies on proposed soil improvement innovations and waste-treatment solutions. By offering a structured evaluation framework within 3 main categories this tool enables cities, end-users, and stakeholders to systematically evaluate, score, and prioritize solutions, facilitating informed decision-making prior to larger-scale deployment.

Methodology

Data Collection

The data are collected through the compilation of a standard matrix where different information, such as description, current state, readiness level, challenges, inputs, outputs, and potential impact on soil improvers, among other factors are investigated. Additionally, interviews can be conducted with relevant stakeholders to gain further insights into the context and specifics of each solution.

Preliminary Feasibility Matrix

The matrix is designed to systematically evaluate the feasibility of proposed solutions across three key dimensions: technical feasibility, impact on current waste treatment solutions, and economics. Each dimension is broken down into specific criteria, which are scored based on their alignment with principles of technological innovation and sustainability.

1. Technical Feasibility:

This dimension assesses the readiness and practicality of implementing the solution. It draws on innovation management frameworks, such as the Technology Readiness Level (TRL) scale, to evaluate the maturity of the solution (e.g., idea stage vs. experimental with demonstrated functionality). Additionally, it considers factors like technological complexity, scalability, and adaptability to current systems, which are critical for determining whether a solution can be integrated into existing infrastructure without excessive disruption.

2. Impact on Current Waste Treatment Solutions:

This dimension focuses on the potential effects of the solution on the existing soil

improver production system. It evaluates volume, quality, and homogeneity of the soil improver produced, as well as the logistical requirements for implementation. These criteria are informed by circular economy principles, which emphasize minimizing waste, maintaining resource quality, and optimizing logistics to reduce environmental and economic burdens. Solutions that negatively impact the current system (e.g., by reducing soil improver quality or requiring excessive logistics) are scored lower, while those that align with sustainability goals are scored higher.

3. **Economics:**

This dimension evaluates the financial viability of the solution, considering both capital expenditures (CAPEX) and operational expenditures (OPEX). This aligns with innovation adoption theories, which highlight the importance of cost-effectiveness in scaling and sustaining new technologies. Solutions requiring significant investment or ongoing resources are less favorable, as they may face barriers to implementation and long-term adoption.

A scoring system of 1 to 5 reflects the degree to which each solution aligns with these principles.

Classification of Final Scores

According to the created score matrix, the minimum and maximum achievable scores are 13 and 65 respectively. Since the overall analyzed solutions for LL have a score between 30-60, we decided to define 3 different ranges of evaluation. In particular, solutions with a score between 30-40 would be considered as “non feasible” according to the provided informations, the ones between 40-50 need more information to be correctly evaluated and more criteria need to be investigated (such as the PESTEL and SWOT analysis), while solutions between 50-60 are defined as feasible.

Attachments

[Prefeasibility Matrix](#)