Reinvented Toilet Pilot Playbook

Streamlined Guidance for Technology Partners and Commercial Partners

STeP Sanitation Technology Platform

http://stepsforsanitation.org/

The Sanitation Technology Platform (STeP) helps transformative technologies reach the 4.5 billion people worldwide who don't have access to safely managed sanitation. STeP provides a full range of services including field testing, market intelligence, and user insights to help inventors and industry develop products and services that address market and consumer needs. STeP is a collaboration of global experts and organizations that removes risk and streamlines the path to market, fostering greater success for its clients. As a department within RTI International, Innovation Advisors is the implementing partner of STeP.

RTI INTERNATIONAL

Innovation Advisors

STeP supports the acceleration and commercialization of non-sewered sanitation solutions. Such technologies include a new class of off-grid fecal waste processing technologies funded by the Bill and Melinda Gates Foundation:

Reinvented Toilets are designed to treat human waste on-site. These units achieve complete pathogen destruction and operate in closed loop, recycling treated water for flushing. Some units operate independent of grid electricity and are being designed to cost less than $0.05/user/day.

Omni-ingestors are truck-mounted treatment systems that enable rapid and complete desludging, liquid and solid separation, on-site treatment of the liquid stream, and more efficient transport of solids to a centralized treatment facility.

Omni-processors are community-scale fecal sludge processing facilities that produce useful byproducts (e.g., energy, purified water, ash) that can be sold to offset operating costs.

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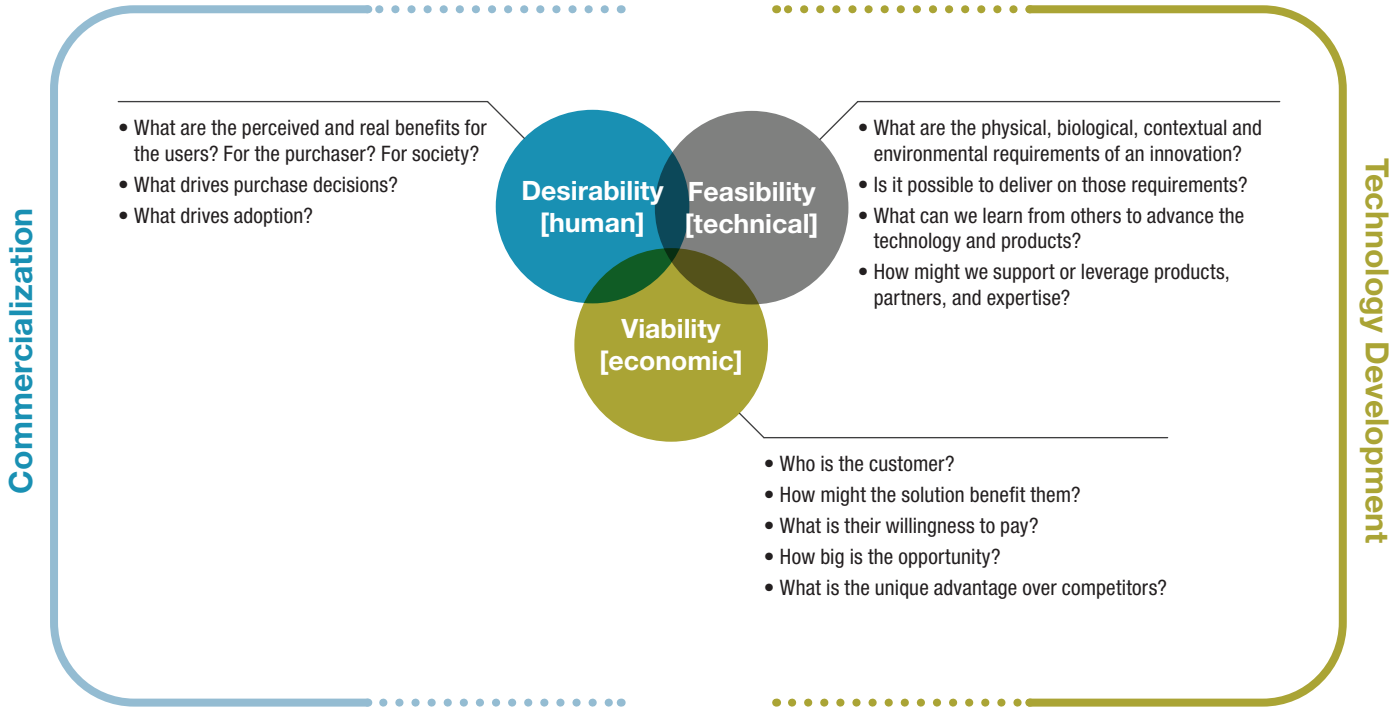
Factors That Inform Pilot Test Design and Implementation

Newly introduced technologies fail for many reasons, including low user adoption, a lack of understanding of the target market, an unsound business model, and more. This resource exists to help technology developers and early adopters plan effective pilot tests that increase a new technology's chance for success. Drawing from the concept of design thinking,[1] this Playbook is framed by three overlapping priorities — viability, desirability, and feasibility — that ultimately inform technology design, product launch, and scale-up to reduce the risk of failure. These priorities matter whether you are looking to commercialize a transformative sanitation technology or wanting to implement an innovative sanitation program that leverages such technologies. In both cases, understanding the drivers behind these priorities will help you design a successful pilot test, including selecting a pilot site that aligns with your defined goals for eventual scale-up.

Figure 1. A well-designed pilot of novel sanitation technologies is framed by three overlapping priorities — viability, desirability, and feasibility — and seeks answers to many questions relevant to technology development and program implementation



1 "Design thinking is a human-centered approach to innovation that draws from the designer's toolkit to integrate the needs of people, the possibilities of technology, and the requirements for business success." Tim Brown, CEO of IDEO, https://designthinking.ideo.com/

A pilot test serves as a critical step before going to market or implementing a program. Such a test offers organizations the opportunity to rollout the solution in small numbers before attempting large-scale implementation. Pilot testing provides a safe place to fail and can save organizations time and money in the long run. But how do you know what to pilot and when? How do you design a pilot? And where should you pilot test your solution?

HOW: Pilot design is guided by organizational goals and objectives for the pilot, what organizations — be they commercial partners, technology developers, municipalities — consider to be the definition of success, and the evaluation metrics. All of this information is typically presented in a Pilot Plan – or a written roadmap for the pilot – that answers the who, what, when, where, and how of the pilot.

WHERE: Where to pilot depends on many factors and is often what we think of first when considering a pilot. This chapter aims to guide organizations on what to consider when selecting a site to effectively pilot sanitation solutions. The term "site" in this context is the physical location the solution is to be installed and tested.

WHO: This Playbook focuses on piloting a reinvented toilet (RT) and is mainly intended for those interested in piloting an RT or other sanitation solution in their district: 1) innovators, including technology developers and their commercial partners (CPs); 2) implementers, such as government leaders (such as cities and municipalities) and sanitation planners; and 3) donors.

While municipalities and government leaders can fund and develop pilot test sites, there is risk to them acting alone and/or in isolation of private sector partners who will take their technologies to market. Those who run pilots in isolation of the RT private sector partners may fall victim to the pilot trap, where even promising solutions fail to scale-up because of insufficient market mechanisms, incentives, and/or pull to ensure their uptake.

For the purposes of this Playbook, we will refer to the "who" as the pilot team from here on out.

WHAT: A pilot may include a package of interventions consisting of "hard" components such as a new technology, and "soft" components such as a training or marketing approach. This Playbook mainly focuses on the hard components because of the unique, rather complex infrastructural needs and effort required to deploy and operate transformative sanitation technologies such as RTs.

WHEN: Many choose to pilot when the scope of implementation and the risk of commercialization failure is large and/or the proposed solution could have far-reaching or unintended consequences (Hessing, 2014). From a technology development perspective, pilot testing should not occur before the technology is ready, which is assessed through nine defined (but not necessarily linear) steps (as originally developed by NASA, 2012, and adapted for the RT context in **Figure 2**).

Conducting a pilot may be your best bet for successful scale-up

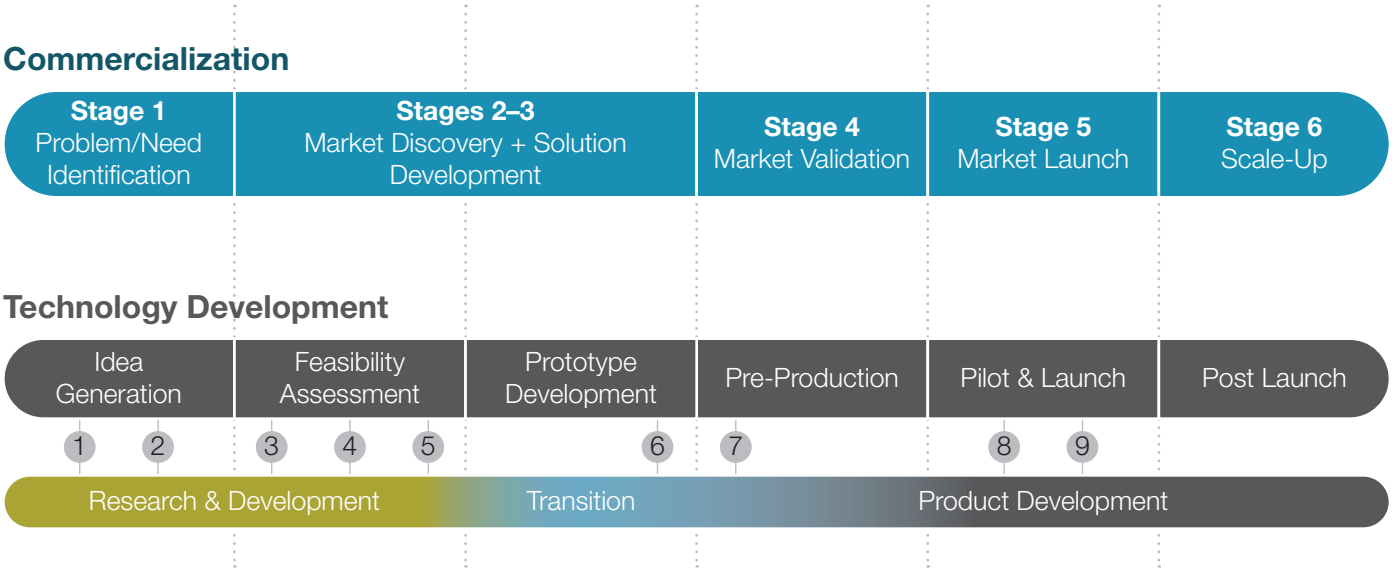
No matter how much planning you do, there will always be kinks to work out. Pilot testing serves an essential step in successful commercialization and large-scale implementation of a program involving transformative sanitation technologies.

A well-designed pilot will help you:

- Test and validate your business model
- Identify challenges that need to be overcome before full-scale commercialization or program implementation
- Understand user preferences, acceptance, and effective engagement practices
- Form an early view of your go-to-market strategy and necessary partnerships, and
- Confirm the solution and the market opportunity are ready for commercialization or full program implementation.

WHY: Propelled by a maturing technology portfolio, a high-profile Reinvented Toilet Expo, and a committed cohort of CPs, efforts to pilot test RTs in real-world environments are gaining momentum. Numerous CPs are weighing various pilot test opportunities around the world and across use cases and need guidance on real-world testing, demonstration design and implementation.

Figure 2. Before piloting, a Reinvented Toilet should be approaching market launch and meet Technology Readiness Level 8 and as shown in the Commercialization and Technology Development Pathways (Bill & Melinda Gates Foundation , 2017)



About

- Technology development and commercialization include a wide range of technical, market, and nonmarket activities on the path from technology development to market success.
- The activities along these paths will evolve and change in nature as do the options and partnerships required to support transition from R&D to product development.
- While presented as a linear process, these activities should be integrated and iterative, so that market factors inform and drive technology development and vice versa.
- Not all paths from prototype to product success will follow the same path — one size does not fit all.

Technology Readiniess Levels

1. Basic principles observed and reported
2. Technology concept and/or application formulated
3. Analytical and experimental critical function and/or characteristic proof-of-concept
4. Component validation in laboratory environment
5. System/subsystem model or prototype demonstration in a laboratory environment
6. **Engineering Validation**: System/subsystem model or prototype demonstration in a relevant environment
7. **Design Validation**: System prototype demonstration in an operational environment
8. **Quality Validation**: Actual system completed and qualified through test and demonstration
9. **Volume Validation**: Actual system proven through successful product launch

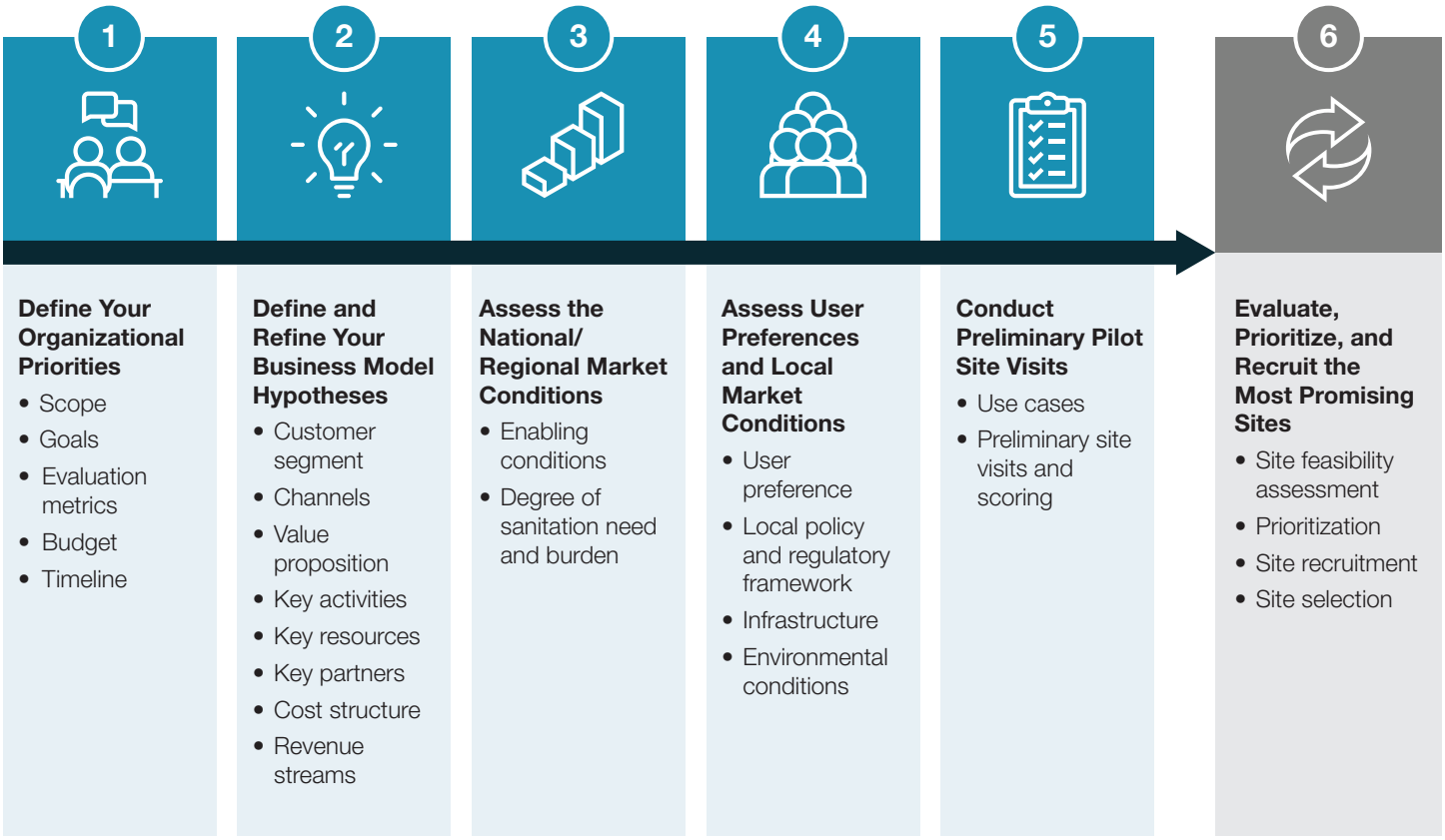
How to Select a Pilot Site

Selecting a pilot site involves more than reviewing the physical conditions and the type of community where an organization wants to test.

Consequently, using a six-step selection process (see **Figure 3**) can help you find the right site to validate the underlying technology and your business model assumptions:

- **Step 1 through Step 4** are primarily desk-based activities to gather information that will align organizational priorities and business model hypotheses with potential pilot locations.
- **Step 5** involves fieldwork to visit the potential use cases—such as a school, apartment building, or bus station—and assess their feasibility for a pilot.
- **Step 6** involves evaluating the sites visited, prioritizing those deemed most suitable, and engaging in site recruitment to obtain buy-in from the site owner and/or management to conduct the pilot.

Figure 3. Six steps to identify and select suitable pilot sites that strategically align an organization's priorities and business model hypotheses



STeP's experience in identifying suitable RT testing sites suggests the most successful strategy uses multiple identification and recruitment techniques. After identifying the city, leveraging existing contacts and developing relationships with key partners have been shown to be the most fruitful elements in finding suitable pilot sites. However, for each field testing exercise, the potential identification and outreach strategy should be based on the underlying technology requirements and the key business model components, such as customer segments, key partners, and key resources.

The list of potential sites should comprise a minimum of 5 sites but preferably 10 to 15 sites. This range allows for enough flexibility to short-list 3 strong candidate sites for recruitment activities. A larger number of potential sites to visit is better because the pilot team have vetted a longer list, which will quickly allow recruitment of an alternate site late in the process, if needed.

Before visiting any site, the pilot team should document how the site evaluation criteria will be collected, such as using a field notebook, spreadsheet, photographs, or other method. Collecting information in the same format for each site visit (Step 5) will facilitate cross-site comparison during the evaluation and prioritization step (Step 6).

The **Pilot Site Selection Guidance Form** (see Appendix 1) presents topics to consider from Steps 1
through 5. Completing the steps in order is recommended but not mandatory, and you may go back to revise or add to the previous sections as new information arises.

You can use the preliminary site visit forms provided in Step 5 to evaluate the sites through either a completeness standpoint (yes/no checklist) or through a weighted-scoring approach where the pilot team defines the priority criteria and assigns a weight based on their importance. The preliminary site visit checklists also can be tailored to include the specific requirements of the sanitation solution being piloted.

After conducting preliminary site visits, the pilot team should evaluate and select the most promising sites (Step 6). These sites should be used to officially recruit site management and the user community for the pilot.

Additional detail on the steps and criteria included in the Pilot Site Selection Guidance Form are presented in the section entitled **What to Consider When Selecting a Pilot Site**. Best practices and lessons learned are presented succinctly in text boxes, and links to additional STeP and other resources are provided in the **References and Supporting Information** section.

No one-size-fits-all approach to piloting

This chapter provides good practice guidance to assist with pilot site selection. However, it will not provide a pilot team with a specific country, municipality, or city in which to pilot a solution. There is no "one size fits all" approach to piloting and there are likely multiple sites where an organization could effectively conduct a pilot.

What to Consider When Selecting a Pilot Site

This section describes each step when selecting a pilot site and provides more context for the criteria included in the Pilot Site Selection Guidance Form.

Step 1. Define the Organizational Priorities

Understanding your organizational priorities is a critical first step in the pilot design and site-selection process. These priorities form the boundaries within which the pilot test lives, and most importantly, the budget and timeline available to complete the pilot.

Specific considerations include the following:

Scope

- What are you piloting and why?
- What are you including and excluding?
- How does this pilot fit within your mission and business goals?
- How does the pilot strategically align with other organizational activities?

Goals

- What do you want to accomplish?
- What are the desired outcomes?
- Are the goals S.M.A.R.T. (specific, measurable, attainable, realistic, and time-bound)?

Evaluation Metric

- What do you want to measure and why?
- How will this information inform your business model and plans for commercialization or scale-up?

Budget

Budget can be an important determining factor in selecting

- where to pilot,
- how many sites to include in a pilot,
- how many units to test,
- what to analyze,
- how many user studies to conduct, and
- duration of a pilot.

Timeline

Are you giving yourself enough time to

- design and plan for the pilot,
- commission the technology (including any modifications to existing infrastructure),
- receive human ethics research approval (if needed),
- engage users,
- implement the pilot,
- decommission the technology, and
- evaluate the data?

Organizational priorities are strategic, high-level objectives an organization needs to meet in a given time frame to achieve organizational success.

Step 2. Define and Refine the Business Model Hypotheses

At the pilot stage, technology developers and commercial partners should have core business model hypotheses defined so that the pilot can validate them through the experimentation process. Although sanitation project planners and implementers, such as local municipalities, may not have their own business model, they will be considering similar factors if they are choosing widespread implementation of the solution.

Additionally, sanitation project planners may be engaging with partners in the private or nonprofit sector that have a vested interest in sustaining the technology to be piloted beyond the pilot test. Consequently, their core business model hypotheses will become fundamental to the pilot test.

Specific considerations include the following:

Customer Segment

- Who are your customers?
- Who are you creating value for?
- A pilot should be tested in a subset of the target market—the group(s) of users or customers expected to use or purchase the solution. When selecting a site, consider:
  - How relevant is this testing location to target users?
  - Does the location serve as a model market?

Value Proposition

- The value proposition is a promise of the value of a solution that will be delivered to or experienced by the customer.
- During site selection, ask whether the value proposition addresses the need and demand in the target market.
- During the pilot, an organization should seek to confirm the relevance of the technology and whether it resonates with the local culture (ExpandNet and WHO, 2011).
- If the solution is incongruent with existing policy and culture, the organization will need to include considerable advocacy to achieve any necessary policy and behavior change to institute it (ExpandNet and WHO, 2011).

Key Resources

- Key resources include the personnel, skills, services, etc., needed to deliver on the value proposition.
- Consider whether the following are needed to deliver on the pilot:
  - Engineers
  - Technicians
  - Laboratory capabilities
  - Fecal sludge collection
  - Plumbers
  - Survey researchers

Key Partners

- Partnerships may need to be tested during the pilot, including manufacturers, service providers, funders, private-sector partners, community leaders, and others.
- Technology developers may include the manufacturing/production chain in their pilot to verify the quality of production standards before producing at scale.
- During site selection, technology developers may want to consider the distance to potential manufacturing partners.
- Proximity to funders and private-sector partners may be relevant to allow them to visit the site and engage in-person with the pilot team.

Business models describe the rationale for how an organization intends to create, deliver, and capture value from a solution by considering economic, cultural, social, and other contexts.

Additional Resources

- Getting access to relevant users is an essential facet of simulating a full-scale rollout of a solution.
- Answering the question of customer segment may require an assessment of the market landscape to determine the commercial opportunity and size in the locations where an organization wants to deploy and/or sell the solution.
- See the demand and supply assessment guidance from the Sustainable Sanitation Alliance for help in how to collect data to understand sanitation needs.
- This guidance focuses on public toilets but includes a relevant data collection guidance document for other sanitation options.

Other business model components that are lower priority for the pilot site selection process, but important in the pilot design, include the following:

Key Activities

- Activities needed to provide value to the user and customer.
- The pilot is designed around these activities.

Customer Relationships

- In commercialization and full-scale implementation, an organization needs to consider how to get, keep, and grow the user and customer base.
- This depends largely on how an organization interacts with users and their customers, in addition to the benefits of the solution.
- Depending on the type of solution and who the target customers are, this may be important to consider in the pilot design if "soft" components—such as educational awareness, marketing, and outreach efforts—are being tested.

Channels

- This component includes how an organization will deliver the solution and how it is reaching target users and customers.
- The pilot is essentially being designed to deliver the solution directly to the customer/user.
- Like customer relationships, this may be considered in the site-selection process to test marketing and outreach materials, for example.

Cost Structure

- Cost structure focuses on the major cost drivers for manufacturing, servicing, and other activities required to implement the solution.
- This component can be tested during a pilot and during site selection, and it is mostly tied to the key partners and key resources component.

Revenue Streams

- Revenue streams are what the organization primarily relies on to generate a return on investment or create an economically sustainable solution.
- A pilot can be designed to test revenue streams by including a survey to determine what customers are currently paying for sanitation and what is their willingness to pay for the solution.
- When considering site selection, being able to test revenue streams is directly linked to access to the target customer segment(s) and potentially to key partners and key resources.

Considerations for International Pilots

- If you are considering an international pilot, your budget must factor in shipping, such as
  - international and domestic import permits and fees,
  - courier services,
  - foreign transaction fees for personnel, and
  - other services.
- International shipping costs can be exorbitant depending on the size of the technology, the method of shipping, and how long you plan to leave the content in the country.
- You may need a separate courier to transfer an international shipment from a port of entry to the actual location where you want to ship the technology.
- Foreign transaction fees should be included if paying foreign staff in a country other than your registered business.
- Other aspects include language barriers and the extra effort required to truly understand the local culture, context, and regulatory environment.
- Identifying trusted local partners is critical for success because you will need to rely on them for day-to-day activities.

Step 3. Assess the National and/or Regional Market Conditions

Market conditions can affect the ease of conducting a pilot, its success, and the commercial rollout or full-scale project implementation. Consequently, it is important to consider geographical sizes of a market, from national to regional, to assist with solidifying which country or region to pilot in.

If you already know the country and region, these criteria are helpful to assess the pilot design for the scale-up phase. The criteria are grouped into two categories, enabling conditions and the degree of need for sanitation improvements.

Enabling Conditions

A catchall for several factors, enabling conditions indicate whether a country provides a supportive environment for innovation and demonstrates an appetite for risk across sectors such as sanitation. These factors include:

- **Political agenda and government leadership**: Consider the current political agenda and the ongoing and planned initiatives in the sanitation space. Is the local administration supportive of or against decentralized sanitation solutions? Has a nationwide initiative just been launched to increase access to improved sanitation? If yes, how will this impact your business model and is this the best country where to conduct the pilot? This will not make or break a pilot, but it is helpful to pilot in a country that is supportive of a technology such as the reinvented toilet.
- **Government spend**: Determine the resources that have been committed over the next 5 to 10 years for sanitation improvements. This information is typically available in a national or state budget and may be found through an internet search. Government spend is an indicator of government commitment to solving sanitation and related public health issues.
- **Regulatory and policy landscape**: The existing regulatory environment may ease the path to pilot testing or make it more challenging. Consequently, understanding the broader political and regulatory environment for innovation and experimentation serves as a key factor in site selection. The regulatory framework may impact technology performance requirements, potential environmental and public health risks, and human research ethics.

  There are multiple levels of regulation that may differ by country, province/municipality/state, and/or city. Be aware of (a) the regulations, policies, and permitting procedures, (b) the review and approval process, and (c) compliance and enforcement activities. Be cautious if there are existing regulations that read as if they may prevent the implementation of the technology an organization wants to pilot.
- **History with innovative projects**: Often, when a solution is novel or unheard of by decision-makers, it is not promoted for fear that it is a risky enterprise. Identifying other decentralized sanitation projects in the same country or in a location with similar conditions—governmental, environmental, economic, etc.—can be helpful to demonstrate feasibility and identify lessons learned. This is a low-priority consideration at the site-selection stage.
- **Diversity of financing options**: Financing options may include funding from government, donor organizations, aid organizations, development banks, the private sector, and other sources. This is not considered a key criterion for site selection but is a bonus if all other factors are favorable for one country over another. This may be a low-priority consideration at the site-selection stage, depending on how heavily the piloting organization plans to rely on external funding as compared with customer sales.

Market conditions relate to the attractiveness (or not) of the overall market at a particular point in time in which a business operates.

Additional Resources

When identifying potential countries and planned infrastructure investments, **consider projects funded by donor agencies and development banks** (e.g., World Bank, Asian Development Bank, Inter-American Development Bank, Japan International Cooperation Agency, GIZ) that fund large infrastructure projects such as sewerage networks, centralized wastewater treatment plants, and roads.

Most of these organizations have searchable project databases and/or have coordinated with or notified a local government official of planned projects in their country or city.

- **Private-sector interest and leadership**: Similar to the diversity of financing options, private-sector interest and leadership can be an indicator for eventual commercialization. This may be particularly important for organizations that identify the private sector as a key partner in their business model.

  Many countries and development organizations are actively promoting and supporting public-private partnerships (PPPs). The World Bank's PPP Legal Resource Center (https://ppp.worldbank.org/public-private-partnership/overview/international-ppp-units) provides a useful global picture of PPPs at the country and region levels, and more specifically on the water and sanitation sector (https://ppp.worldbank.org/public-private-partnership/sector/water-sanitation).

- **Degree of Sanitation Need and Burden of Disease:** A sanitation solution should have the potential to address important public health problems at scale in the sanitation sector. Determining the degree of sanitation need and burden of disease in the target market can be assessed by understanding the current sewerage coverage in the country and coverage in urban as compared with rural areas, and by pulling data on the percentage of disease attributable to poor sanitation. For many countries, this information can be found in the World Bank Open Data, UNStats, and/or the WHO/UNICEF JMP global database.

Step 4. Assess User Preferences and Local Conditions

Understanding user preferences, the regulatory framework at the site level (such as construction permitting), available infrastructure, and the environmental conditions at a city or municipal level helps the pilot team decide exactly which sites to visit in the site-selection process.

User Preferences

User preferences consider whether the solution is needed and whether it "fits" given the local sociocultural context. Similar to the degree of sanitation need at the country level, need at the city level can be determined through the number of available toilets citywide—such as community toilets, public toilets, and household toilets—and the number and capacity of wastewater treatment plants.

User preference is assessed by user insight studies that aim to understand the context in which the user and stakeholders operate and the context in which the solution needs to perform. Understanding user insights involves activities centered around understanding perceptions, behaviors, and attitudes toward new sanitation solutions across various stakeholders. The findings are used to inform components such as technology design and marketing and outreach materials.

Regulatory Framework at the Site Level

The regulatory framework at the site level includes zoning and construction permitting requirements that may be needed. Depending on the solution, an outdoor accessory structure may need to be built, or a large tank may need a permit. This can be highly specific at the local level.

Infrastructure

Infrastructure includes access to and reliability of the broader infrastructure in the city or region—such as electric, water, and sewer—and at the building or site itself. A pilot team should consider the adequacy of the macrolevel infrastructure at the site-selection stage first and then assess the building-level infrastructure during the site visits (Step 5).

Additional Resources

- Incorporating user-centered design throughout the technology development and commercialization process can increase the success rate of sanitation technology deployment and adoption (STeP, 2016).
- See STeP resource, Applying a User-Centered Design Approach to the Reinvented Toilet Development Process for guidance on user-centered research, how to identify value drivers and customer segments, sample interview guides, and dos and don'ts.
- STeP also is in the process of preparing a User Study Guide with templates, best practices, and lessons learned.

This is important because access to the infrastructure does not always equal reliability in the developing world. If a technology requires continuous power to operate, for example, this criterion will be high priority in the site-selection process.

Adequate infrastructure in a city also impacts the ability to attract businesses and people, thereby connecting supply chains and efficiently moving goods and services across borders. The easiest way to assess the reliability and adequacy of the power and water supply, for example, is to ask contacts living in the city, or search the internet for frequency of power outages and water shortages in a given location.

Environmental Conditions

Environmental conditions refer to the terrain, local weather, and climate as it relates to stability of the technology, access to the site, frequency of the surrounding area and infrastructure to disasters, and security concerns. The pilot team should consider the physical geography (such as elevation, slope, urban density, and other features of the terrain), the local weather and climate variations, and the potential for and frequency of natural disasters.

Another facet of security that may be relevant depending on the country is personal security from theft, kidnapping and other personal violence, and/or disease outbreaks.

The pilot team should determine the risk (or desirability if it fits the value proposition) related to these factors and proceed accordingly.

Step 5. Conduct Preliminary Pilot Site Visits

At this stage, the pilot team should know which city/cities or municipality/municipalities they want to investigate further, and what use cases—such as schools, bus stations, or apartment buildings—to pilot in. The pilot team will now need to identify a long list of use cases located in the city, which can be performed using one or more of the following techniques:

- An application, such as Google Maps
- Targeted internet searches to find the use cases
- Data sources that identify use cases, such as GIS layers and Census data
- Word of mouth and recommendations from key partner organization(s), government officials, real estate organizations, or construction companies
- Surveys and interviews of potential beneficiaries in the target market

Based on STeP's experience in identifying suitable field-testing sites, a larger number of potential sites to visit (10 to 15) is better because this provides a vetted long list to quickly recruit an alternate site late in the process, if needed. After creating the long list of sites, the pilot team should develop a plan and schedule to visit each one.

The list should be prioritized based on the sites the pilot team believes to be the most promising. If the site is private property and/or in a gated community, keep in mind that visiting the site may require advance notice to the site owner or management through a letter or telephone call. If advance notification is required, please see Step 6 for engagement and recruitment tips.

Before visiting any site, the pilot team should document how the site evaluation criteria will be collected, such as by field notebook, spreadsheet, photographs, or another method. Collecting information in the same format across sites will facilitate comparison during the evaluation and prioritization step (Step 6).

STeP's Experience in Site Selection

STeP's experience in identifying suitable field-testing sites suggests that the most successful strategy involves using multiple techniques:

- **Leverage existing contacts and relationships** of key partners to find suitable sites.
- **The ultimate site must fit with the sanitation technology requirements and the key business model components**, such as customer segments, key partners, and key resources.
- **Create a list of potential sites** with a minimum of 5 and preferably 10 to 15 sites. This range allows for enough flexibility to short-list 3 strong candidate sites for recruitment activities.
- **Visit each site in-person** and take lots of notes and pictures from all angles to share with the entire pilot team, and to reference later as needed.
- **The best sites have engaged and excited partners**, such as site managers and the user community.

The Pilot Site-Selection Guidance Form presents two options for summarizing the findings for evaluation:

- **Step 5a. Preliminary Site Visit Checklist**. This form can be tailored, as needed, and supplemented with specific technology requirements defined by the pilot team.
- **Step 5b. The Preliminary Site Visit Weighted Scoring Sheet**. This percentage-based weighting system requires the pilot team to assign a score and a weight to each criterion based on its importance. The weight is the percentage the pilot team believes each criterion should count for in the evaluation process, such that the total across all criteria equals 100%.

The pilot team should choose the option that fits best given their priorities and the level of complexity across the sites.

When conducting preliminary site visits, the pilot team should bring the following materials:

- Identification, such as a business card
- A summary handout or presentation describing the pilot, that includes the following:
  - Pilot purpose, goals, and objectives
  - Benefits to the site owner, such as why should they participate
  - Roles and responsibilities (and the duration of them) of the site management
- Pilot Site Selection Guidance Form (or adapted template) and technology requirements, and/or schematic of the technology for reference
- Notebook or laptop for notetaking
- Camera to take pictures of the site from various angles
- Measuring tape for ballpark measurements for technology space requirements, or distance to outlets, etc.
- Mobile phone with data plan and preferably the ability to determine GPS coordinates; for example, dropping a pin on Google Maps is an easy way to remember exactly where the site is

Perhaps the most important part of the site visit is to visually assess the site to determine the feasibility of installing any sanitation technology considering the type and condition of the existing infrastructure. When visiting specific sites, the pilot team should use the technology requirements as the site-specific criteria for this initial assessment to determine the adequacy of each site and the range of potential infrastructure modifications needed. This initial assessment should be followed by a detailed site investigation—after obtaining agreement from the site owner—with a reputable contractor to understand exactly what modifications will be required and the estimated cost to perform them.

In addition to the Pilot Site-Selection Guidance Form, **Table 1** presents another example of criteria used to determine whether a specific site meets the usage, structural, and other technology requirements at an apartment building as defined by a pilot team.

After conducting the initial visits, the pilot team should review and clean up their notes; confirm the Pilot Site-Selection Guidance Form is complete; and name, date, and organize photos and other documentation for recordkeeping.

Activities to Finalize Site Selection

In general, the pilot team will conduct the following activities after prioritizing sites to visit:

- **Connect with the primary site contact** to introduce the pilot team and provide an overview of the purpose of the pilot and site visit.
- **Conduct preliminary site visits** with or without a site contact (as needed) to gather information about potential fit.
- **Evaluate and prioritize site(s)** to move forward with.
- **Conduct an initial low-level meeting with the site management** to receive verbal approvals from site management for the pilot.
- **Identify a respected contractor** (preferably one familiar with the site management) to complete a walk-through and assess the extent of modifications needed.
- If site is appropriate, **sign a memorandum of understanding** with the site owner/management.
- **Conduct an initial meeting with site users** (as relevant) to start the user engagement process.

Table 1. Illustrative site-selection criteria for a technology to be tested in an apartment building*

Category	Priority	Site-Specific Criteria for Apartment Buildings	Requirement	Site Meets Requirement?	Comments
Existing plumbing-infrastructure	High	Plumbing exterior to building	Yes	☐	
	High	Access to water	Yes	☐	
Usage	Medium	Suitable number of apartments	5 or more	☐	
	High	Number of people consistently residing in the building	15 or more	☐	
	High	Demographics/use case of occupants	Families with low to moderate income	☐	
System space requirement	High	L x W x H (plus leeway space needed for operation and maintenance)	20m x 12m x 3m	☐	
	Low	Canopy or cover	Preferable, but not required	☐	
	High	Roof access and space for tank	Yes	☐	
Security	Medium	Manned security	Yes	☐	
Electrical power	High	80% reliable power supply	Yes	☐	
	High	Backup provided for common areas (e.g., generator)	Preferable, but not required	☐	
Weather and Climate	Medium	Low potential for flooding	Yes	☐	
	High	Above freezing at all times	Yes	☐	
Ease of access to site	Low	Proximity to airport	Within 40 km	☐	
	Low	Good road conditions	Preferable, but not required	☐	
	High	Easy site accessibility	Yes, for daily site operators	☐	
Responsiveness of property management	High	Common language	Yes, Tamil and English	☐	
	High	Responsiveness, good communication	Yes	☐	
		Moderate to high level of enthusiasm and engagement	Yes	☐	

**Source: STeP Field Testing Manual, 2015.*

Step 6. Evaluate, Select, and Recruit the Most Promising Pilot Sites

Evaluate and Select Potential Pilot Sites

After visiting each site on the list, the pilot team should conduct a comparative evaluation to identify the most promising sites to formally recruit to participate in the pilot.

Comparative evaluations can be done by comparing the completed forms from Step 5a (Preliminary Site Visit Checklist) or Step 5b (Preliminary Site Visit Weighted Scoring Sheet) in the Pilot Site-Selection Guidance Form.

Recruit Sites

Depending on the type of site, the pilot team may be able to conduct a preliminary site visit with or without contacting the site management, but will eventually need to perform some recruitment activities as part of the site-selection process to formally receive buy-in from the site management to participate in the pilot.

A multifaceted strategy, often involving multiple engagements, may be required to connect with stakeholders, including owners, builders, community leaders, and residents.

The **first stage of recruitment** should focus on explaining the value and purpose of the pilot and sanitation solution to the owner, manager, or community leader (whomever controls the site).

The **second stage of recruitment** involves follow-up activities with the site management to conduct a thorough examination of the overall site layout, structure, and existing individual toilets. If necessary, the contractor and the developer should jointly draw up plans for the required retrofitting activities. Signing a memorandum of understanding at this stage is recommended to formalize the relationship.

The **third stage of recruitment**, if needed, should focus on making a similar pitch to site users to gain their buy-in and support.

The project team may need to prepare a range of information, education, and communication materials for the various recruitment activities, including:

- A one-page summary geared toward the site management of the pilot's objective, goals, roles and responsibilities, and follow-up contact information for the pilot team lead.
- A one-page, high-level summary for site users explaining the value and purpose of the pilot and a description of how they may be involved.
- A schematic diagram of the intended solution.
- A detailed slide deck (such as a PowerPoint presentation) for the site management.
- A detailed slide deck to use for an in-person public presentation delivered to site users, in coordination with local authorities and the site management, as required.

Good Practices: Site Recruitment During the Site-Selection Process

- **Exchange materials about the project as early as possible in your site selection process**, such as a one-page summary of the project goals, the value proposition, the benefits to the site, and roles and responsibilities.
- **Make sure both sides have a clear picture of the strengths and limitations** of the pilot at the site location before signing the memorandum of understanding.
- **Translate handouts to the local language**, such as the summary of the goals and/or a frequently asked questions document, even if the site owner speaks and reads English well.
- **Meet with a local community leader or group from your target user community** to get early buy-in before finalizing the site-selection process.
- **Conduct a brief survey to understand what the local population currently does regarding sanitation** and any cultural issues that might affect their willingness to try your solution.

References and Supporting Information

STeP Resources

- Field operations manual (internal)
- STeP Field Testing resources
- General Logistics Requirements for RT installation and Operation during Field Testing in Coimbatore, India (internal)
- Global testing protocols and parameters
- Ethics and Safety Guide
- User Centered Design for Sanitation Technologies
- Applying a user-centered design approach to the Reinvented Toilet development process
- Capturing Stakeholder Perspectives: Survey Instruments
- User Study Guidebook (currently under development)
- Prototype to Product Playbook (internal)
- Market Intelligence Framework (internal)
- Sanitation Technology Funder Landscape
- How-To Guides (e.g., How to conduct an investor's meeting)
- Numerous questionnaires, survey tools, and research guidance for assessing potential use cases, undertaking market research, and investigating the competitive technology landscape (internal, with outputs of these processes available on the STeP website)

External Resources

Several resources were reviewed in the development of this Pilot Playbook. Those most useful in the context of the site selection process are included below.

Guidance Specific to the Sanitation Sector

- **ExpandNet tools and publications**. ExpandNet, together with WHO, has produced tools, guides, and other resources that are being used by country teams, projects, and institutions in their scale-up endeavors (https://expandnet.net/tools/). Two resources used to develop the Pilot Playbook are:
  - ExpandNet and WHO, 2011. Beginning with the end in mind: Planning pilot projects and other programmatic research for successful scaling up. Available here: https://expandnet.net/PDFs/ExpandNet-WHO%20-%20Beginning%20with%20the%20end%20in%20mind%20-%202011.pdf.
  - ExpandNet and WHO, 2010. Nine steps for developing a scaling-up strategy. Available here: https://www.who.int/immunization/hpv/deliver/nine_steps_for_developing_a_scalingup_strategy_who_2010.pdf.
- Hessing, T. (2014). *Pilot and implementation planning. Six sigma study guide*. Retrieved from https://sixsigmastudyguide.com/pilot-implementation-planning/.
- Mercer, S.J., Sindall, R.C., Cottingham, R.S., Buckley, A., Alcock, N., Zuma, L., & Gounden, G. (2018). Implementing an engineering field testing platform for sustainable non-sewered sanitation prototypes. In Shaw, R.J. (ed). *Transformation towards sustainable and resilient WASH services: Proceedings of the 41st WEDC International Conference*. Retrieved from https://dspace.lboro.ac.uk/dspacejspui/bitstream/2134/35854/1/Mercer-2916.pdf.
- Sustainable Sanitation Alliance (SuSana). (n.d.). *Public toilet management process*. Retrieved from https://www.susana.org/en/community/integrated-content/public-sanitation.

- World Health Organization. (1992). *Guide to the development of on-site sanitation*. Retrieved from https://www.who.int/water_sanitation_health/hygiene/envsan/onsitesan.pdf

Pilot Design and Site-Selection Guidance from Other Sectors

- National Center on Response to Intervention. While this organization's focus is on education, their pilot site-selection document includes relevant guidance for other sectors. See RTI Pilot Site Selection: Things to Consider.
- U.S. Department of Health and Human Services authored two relevant guidance documents:
  - Tips and Recommendations for Successfully Pilot Testing Your Program: A Guide for the Office of Adolescent Health and Administration on Children, Youth and Families Grantees
  - Best Practices for Conducting a Needs and Resource Assessment.

Technology Readiness and Commercialization Guidance

- United States Agency for International Development (USAID). (2016). Ready, Set, Launch: A Country-Level Launch Planning Guide for Global Health Innovations.
- Defense Advanced Research Projects Agency (DARPA). (2018). Small Business Programs Office: Transition & Commercialization Strategy Development Guide.
- National Aeronautics and Space Administration (NASA). (2012). Technology readiness definitions. Retrieved from https://www.nasa.gov/pdf/458490main_TRL_Definitions.pdf.
- U.S. Department of Transportation. (2017). *Technology readiness level guidebook*. Retrieved from https://www.fhwa.dot.gov/publications/research/ear/17047/17047.pdf.

Business Model Canvas and Market Readiness Guidance

- Osterwalder, A. (2013). A better way to think about your business model. *Harvard Business Review*. Retrieved from https://hbr.org/2013/05/a-better-way-to-think-about-yo.
- Sullivan, K., Drescher, M., & Bennett, F. (2017). *From project to product - A new & improved approach to technology & market readiness*. Retrieved from https://www.cloudwatchhub.eu/exploitation/project-product-new-improved-approach-technology-market-readiness.

Appendix 1

Pilot Site Selection Guidance Form

STeP Sanitation Technology Platform

http://stepsforsanitation.org/

Pilot Site Selection Guidance Form

Form prepared by:	Date:	Phone:	e-mail:
Name/description of solution to be piloted:			

Instructions: Fill out each section to the extent you can. Sections 1 and 2 are specific to your organization and the solution being piloted. Section 3 includes site selection criteria at the national level, whereas Section 4 focuses on the city and/or municipal level. Section 5 includes a simple site-specific checklist to use at each potential pilot site visited. Section 6 includes a quick reference guide for site-recruitment activities.

Step 1. Define Your Organizational Priorities

Organizational priorities are the strategic, high-level objectives your organization needs to meet in a given time frame to achieve organizational success.

Fill out the table below and identify what is important to test and/or gather information on during the pilot.

	HOW IMPORTANT IS THIS FOR THE PILOT?				
INFORMATION NEED	**Not Important**	**Somewhat Important**	**Very Important**	**Essential**	**Not Applicable**
Technical Feasibility	☐	☐	☐	☐	☐
Assessment of technical or performance fit	☐	☐	☐	☐	☐
Competing products/technologies/pricing	☐	☐	☐	☐	☐
Intellectual property position/issues/landscape	☐	☐	☐	☐	☐
Meeting regulatory requirements & standards	☐	☐	☐	☐	☐
Other (please describe)	☐	☐	☐	☐	☐
User Desirability	☐	☐	☐	☐	☐
User needs or preferences	☐	☐	☐	☐	☐
Drivers of adoption and purchasing	☐	☐	☐	☐	☐
Willingness-to-pay	☐	☐	☐	☐	☐
Other (please describe)	☐	☐	☐	☐	☐
Economic Viability	☐	☐	☐	☐	☐
Potential use cases (users, clients, adopters)	☐	☐	☐	☐	☐
Target market size/structure	☐	☐	☐	☐	☐
Customer segment & relationships (buyers, funders)	☐	☐	☐	☐	☐
Potential partners (co-developers, distributors, retailers, funders)	☐	☐	☐	☐	☐
Key resources (local workforce, labs, sludge management, etc.)	☐	☐	☐	☐	☐
Revenue streams (pricing structures, funding sources, investors)	☐	☐	☐	☐	☐
Cost structure (cost drivers)	☐	☐	☐	☐	☐
Market opportunities/threats	☐	☐	☐	☐	☐
Other (please describe)	☐	☐	☐	☐	☐

REVIEW YOUR SELECTIONS ABOVE FOR EACH CATEGORY AND THINK ABOUT THE SITE-SELECTION PROCESS

Based on your priorities, what criteria for site selection do you want to uphold? What are the “must haves” for pilot site selection? What nonnegotiable items do you want to articulate from the outset?

WHAT DOES SUCCESS LOOK LIKE?

Describe the pilot scope and strategic alignment with broader organizational activities:

Describe the pilot goals, considering what was identified as the most important information needs (see the Information Needs table above).	For technical feasibility:
	For user desirability:
	For economic viability:

Describe your initial ideas on pilot evaluation metrics (what do you want to evaluate?):

Define the budget:

Describe the timeline (start and end dates, and any constraints, such as a must end by date):

Step 2. Define and Refine Your Business Model Hypotheses

Business models describe the rationale for how an organization intends to create, deliver, and capture value from a solution considering economic, cultural, social, and other contexts. This section asks you to define parts of the business model to help identify what to test or validate during the pilot. Think of all aspects along the value chain of the solution, from making it to selling it to servicing it.

Describe your overarching business model for this transformative sanitation technology:

Describe the value proposition and the problem you are helping to solve:

Describe your target market (e.g., buyers, users, customers):

Describe the potential revenue streams:

List the types of partners, resources, and activities needed to deliver on your value proposition. For example, what kind of workforce is needed to install, operate, maintain, and/or service your solution? What kind of partners will you need for implementation?

Describe the costs you will incur with delivering on the value proposition:

What parts of the business model constitute the areas of greatest risk? What do you need to know more about before you can fully commercialize your solution?

What business model hypotheses do you seek to validate during pilot testing? Consider what this means for pilot site selection and what a pilot site must offer (e.g., access, resources, partners, infrastructure) to effectively test these hypotheses.

Step 3. Assess the National/Regional Market Conditions

Market conditions relate to the attractiveness (or not) of the overall market at a point in time in which a business operates. Market conditions can affect the ease of piloting, its success, and commercial rollout or full-scale implementation. Here, we consider a geographic scope at the national and regional levels of a market.

If the pilot team is starting from scratch in the country-selection process, it may be helpful to create a long list of potential countries and complete this section in batches of three countries at a time.

WHAT LOCATIONS ARE YOU CONSIDERING?

List each country below:	List the municipalities and cities you are considering in each country below:	Include a brief rationale for selecting this country, municipality, and/or city:
1.		
2.		
3.		

ENABLING CONDITIONS: IS THERE AN APPETITE FOR RISK AND INNOVATION?

This table helps assess the feasibility of conducting a successful pilot and eventual market entry. Check each box if the answer to the criterion question is yes, and then enter a score using a scale of 1 (lowest) to 5 (highest). Sum the scores in the last row to quickly compare one country with another.

	Country 1	Country 2	Country 3	Criterion
	☐	☐	☐	Is sanitation a focus of the current administration? Are they supportive of decentralized and innovative sanitation solutions?
Score				
	☐	☐	☐	Is the government investing in sanitation over the next 5–10 years?
Score				
	☐	☐	☐	Is the regulatory and policy landscape supportive of decentralized sanitation and innovation?
Score				
	☐	☐	☐	Have innovative sanitation solutions (technology implementation, awareness campaigns, etc.) been implemented in the past? A history of innovative projects is seen as indicators of feasibility of user adoption or project success. If there is a high uptake of other innovative solutions, consider the market feasibility of your solution in the score.
Score				
	☐	☐	☐	Is there a diversity of financing options available for piloting or implementation?
Score				
	☐	☐	☐	Is there private sector interest/leadership? Are public private partnerships encouraged?
Score				
Total Score				

NEEDS ASSESSMENT: IS THERE A NEED FOR IMPROVEMENT IN THE SANITATION SECTOR?

The solution should have potential to address important public health problems at scale. It is vital to have a good picture of the current population, those in poverty, and the degree of sanitation practices and needs—such as practicing open defecation, with access to improved sanitation facilities, and coverage of improved sanitation—before conducting the pilot. Resources that regularly collect and publish open data include the WHO/UNICEF JMP global database, World Bank Open Data, and UNStats.

Fill out the table below for each country, including the data source and year of the data for reference. After completing the table for each country, score each indicator.

Indicator	Country 1	Country 2	Country 3	Data Source & Year of Data
Total Population (#)				
National				
Urban				
Rural				
In Poverty (%)				
National				
Urban				
Rural				
Practicing Open Defecation (%)				
With Improved Access to Sanitation (%)				
Coverage of Improved Sanitation (%)				
Total Addressable Market Size (#)				**Which country/countries do you want to further investigate in Step 4?**

Step 4. Assess User Preferences and Local Market Conditions

Consider the need at the city level with respect to existing toilets in the highest scored country from Step 3. Write the city names in the first column of the table. Fill out the table with the number (or percentage) of the city-level population with access to community toilets, public toilets, household toilets, or no toilets. If information is not available for a specific city, write "no data" in the appropriate cells. Report the total number or percentage for each sanitation option.

City Name	Population (#)	Community Toilets (#)	Public Toilets (#)	Household Toilets (#)	None/Open Defecation (#)	Data Source & Year of Data
City 1:						
City 2:						
City 3:						
City 4:						
City 5:						

Another way to assess this need is to understand the sewerage coverage, or the existing wastewater treatment plants (WWTPs) within the city boundary, the treatment capacity, and age (as a proxy for the plant's condition). If information is not available for a specific city, write "no data" in the appropriate cells.

City Name	# of WWTPs	Treatment Capacity (liters/day)	Approximate Age of WWTP	Planned Improvements in 5–10 Years?	Data Source & Year of Data
City 1:					
City 2:					
City 3:					
City 4:					
City 5:					

BASED ON YOUR RESPONSES UP TO THIS POINT IN THE FORM, WHAT ARE YOUR TOP THREE LOCATIONS?

Below list your top three cities/municipalities where to conduct the pilot. To focus your investigative efforts, the remainder of this form should consider these three cities/municipalities.

WHAT ARE THE TARGET USE CASES YOU WANT TO PILOT IN?

Use cases are the types of locations you want to pilot—the boundary where interactions between your solution and the user occur. Typical use cases for sanitation solutions include schools, university campuses, residential buildings, public transportation stations, commercial buildings, and hospitals, among others.

Describe the target use cases you would like to pilot in:	Describe the rationale for each target use case:

The checklist below includes criteria to confirm your understanding of the user, the regulatory framework, available infrastructure, environmental conditions, and resources and partners across your top three locations. The questions are framed in a such way that checking a box equals yes.

Write the name of the top three cities/municipalities in the first row. If you do not have enough information to select yes, consider whether you need to collect more data for this city or whether this city checks enough boxes to move forward in your site-selection process.

	City 1	City 2	City 3	Criterion
User Preference	☐	☐	☐	Do you understand the local need, cultural context, and current practices with respect to sanitation?
	☐	☐	☐	Do you expect the sanitation solution to resonate with users?
	☐	☐	☐	Do you have a handle on how best to engage local community groups to increase and sustain use?
	☐	☐	☐	If you plan to conduct user insight studies, are there qualified partners who can perform them?
Regulatory Framework	☐	☐	☐	Are the regulations and standards that may apply during the pilot clear to you? Do you understand the compliance requirements?
	☐	☐	☐	Are you able to obtain the necessary permissions for human research ethics approval (e.g., for user insight studies)?
Environmental Conditions	☐	☐	☐	Is the terrain such that the area is easy to access? Consider the time to get to mountainous regions, rural areas, dense urban areas, etc.
	☐	☐	☐	Is the weather relatively stable throughout the year? If not, are you prepared for a potential weather disruption to technology performance?
	☐	☐	☐	If there have been natural disasters in the past 2–3 years, is the local infrastructure resilient enough that it will not cause disruptions in service?
Resources & Partners	☐	☐	☐	Are there available and qualified personnel to support the pilot?
	☐	☐	☐	Are there qualified analytical laboratories for effluent characterization within a reasonable distance?
	☐	☐	☐	If key partnerships are being tested during the pilot, are they located nearby or within a reasonable distance (if they need to be)?

BASED ON YOUR RESPONSES TO THE CHECKLIST ABOVE, WHICH CITY DO YOU WANT TO PRIORITIZE FOR PRELIMINARY SITE VISITS?

WHAT ADDITIONAL DATA DO YOU NEED TO COLLECT FOR THE CITY WITH THE HIGHEST POTENTIAL BEFORE CONDUCTING A SITE VISIT?

Step 5. Conduct Preliminary Pilot Site Visits

5a. Preliminary Site Visit Checklist

Fill out this form for each site you visit to assess its feasibility for the pilot. Provide an answer for each criterion and add comments to assist with the later evaluation process. You will need to record detailed information—such as the type of plumbing infrastructure, dimensions of the area where any hardware is to be placed, etc.—in a separate location (such as a field notebook or spreadsheet) for your records.

Form prepared by:	Date:	Phone:	e-mail:
Site name:		Address:	
Site owner name:		Phone:	e-mail:

Category	Criterion	N/A	Yes	No	Comments
Business Model Hypotheses	Site provides access to enough users in your target market	☐	☐	☐	
	Value proposition can address the need and demand in the target market	☐	☐	☐	
	Area provides all or most of the key resources	☐	☐	☐	
	Area provides access to key partnerships that need to be tested	☐	☐	☐	
	Site provides the necessary information to test the cost structure and revenue streams	☐	☐	☐	
Infrastructure	Reliable power supply	☐	☐	☐	
	Sewerage connection	☐	☐	☐	
	Reliable water supply	☐	☐	☐	
	Solution fits in the intended space	☐	☐	☐	
	Low to moderate costs for infrastructure modifications and pilot budget and timeline can cover them	☐	☐	☐	
	Site provides other infrastructure amenities that you are looking for	☐	☐	☐	
User Engagement	Site provides a suitable space to engage with users	☐	☐	☐	
	User community leader(s) with high level of engagement	☐	☐	☐	
	Site is safe and easy for users to access, particularly women and children	☐	☐	☐	
	Site management is supportive with high level of engagement	☐	☐	☐	
Environmental Conditions	Site is relatively easy to access for key resources and pilot team	☐	☐	☐	
	Site has ability to withstand extreme weather events and natural disasters	☐	☐	☐	
Other	Please describe:	☐	☐	☐	

5b. Preliminary Site Visit Weighted Scoring Sheet

Fill out this form (available for download in Excel) for each site you visit to generate a weighted score to assess a site's feasibility for the pilot. Rank each criterion in order or priority (1 = highest priority), score each criterion from 1 to 5, and assign a weight for each criterion based on its importance. The total weight assigned must add up to 100%. The weighted score for each criterion equals the score multiplied by the assigned weight. The final weighted score is calculated in the last row.

You will need to record comments and detailed information—such as the type of plumbing infrastructure, dimensions of the area where any hardware is to be placed, etc.—in a separate location (such as a field notebook or spreadsheet) for your records.

Form prepared by:	Date:	Phone:	e-mail:
Site name:		Address:	
Site owner name:		Phone:	e-mail:

Category	Criteria	Priority (rank, 1 to X)	Low = 1	Moderate = 3	High = 5	Score (1 to 5)	Weight (%)	Final
Business Model Hypotheses	Users in target market		High risk that site will not provide access to enough users	Site provides access to enough users in target market	Site will exceed access to users in target market			0
	Value proposition		Unclear as to whether value proposition will resonate with available users	Moderate evidence the value proposition will meet the need and demand	Strong evidence the value proposition will meet the need and demand			0
	Key resources		Some key resources not available within a reasonable distance	Resources available, some positions with limited supply	Plenty of available resources; able to focus on cost-competitive resources			0
	Key partnerships		Minimal ability to test key partnerships	Moderate potential to test key partnerships	Strong potential to test all key partnerships			0
	Cost structure and revenue streams		Unclear as to whether site will allow for cost structure and revenue stream testing	Site provides ability for some cost structure and revenue testing	Site provides ability to test cost structure and revenue stream testing			0
Infrastructure	Power (electricity)		High likelihood or a disruption on a weekly basis	80% or more reliable continuous power supply	100% or more reliable continuous power supply, aside from occasional disruptions			0
	Sewerage		No connection to sewerage network	Connection to sewerage network, but requires retrofitting	Connection to sewerage network, no to minimal retrofitting required			0

Category	Criteria	Priority (rank, 1 to X)	Low = 1	Moderate = 3	High = 5	Score (1 to 5)	Weight (%)	Final
Infrastructure	Fresh water		Site not connected to continuous water supply; or site located in an arid or drought-prone region	Site not connected to continuous water supply, but in an area with plentiful fresh water	Site connected to continuous water supply and in an area with plentiful fresh water			0
	Dimensions of the space where solution will be installed		Site requires moderate renovations or retrofitting to fit solution	Available space for the solution; minimal space for storage and/or personnel	More than enough available space; requires no or minor retrofitting			0
	Costs for infrastructure modifications/retrofitting		High estimated costs; or site pushback	Moderate estimated costs	None to low costs for retrofitting			0
	Other desired infrastructure amenities		Site does not provide additional amenities	Site provides some key desired amenities	Site provides all desired amenities			0
User Engagement	Space to engage with users		Suitable meeting space not available; alternatives require effort for users to access	Site does not provide a suitable meeting space, but alternatives are nearby	Site provides a suitable meeting space; easy for users to access			0
	User community leader(s)		No community leader(s) identified or interested	Leader(s) identified; moderate level of engagement	User community leader(s) with high level of engagement			0
	Safety for users		Moderate to high risk that user community may not use the solution because of safety concerns	Site is relatively safe; caretaker or security guard required	Low risk of safety concerns			0
	Site management		Requires additional documentation and convincing	Interested, but not very responsive	Very supportive with high level of engagement			0
Environmental Conditions	Accessibility of site		Site may be inaccessible during certain times of year	Site requires moderate travel time to access	Site is relatively easy to access for all involved			0
	Resilience		High chance of complete disruption of services in the event of extreme event and/or natural disaster	Low to moderate chance of disruption from an extreme event and/or natural disaster	Site has ability to withstand extreme events and/or natural disaster			0
Other	Please describe:							0
			TOTAL			**0**	**0%**	**0**

Step 6. Evaluate, Prioritize, and Recruit the Most Promising Sites

Evaluate and Prioritize Sites

After visiting each site on the list and completing either form from Step 5a (Preliminary Site Visit Checklist) or Step 5b (Preliminary Site Visit Weighted Scoring Sheet), the pilot team should conduct a comparative evaluation to identify the most promising sites to formally recruit to participate in the pilot. Fill out the table below to document the final scores and additional comments that may impact which sites to prioritize and recruit.

In the "Score" column below, count the yes responses for Scoring Method in 5a, or use the final weighted score for Scoring Method 5B. It is best to use one scoring method for all sites. For each site visited, include a list of items that may need further investigation or focus during recruitment activities.

As a last step of filling out this table, rank or prioritize the sites (1 to X).

Site Name	Date Visited	Scoring Method Used (5a or 5b)	Score	Key Considerations That May Need Focus During Recruitment	Priority

Site Name	Date Visited	Scoring Method Used (5a or 5b)	Score	Key Considerations That May Need Focus During Recruitment	Priority

Recruit the Most Promising Sites

The **first stage of recruitment** should focus on explaining the value and purpose of the pilot and the sanitation solution to whomever controls the site, such as the owner, manager, or community leader.

Category	First Stage of Recruitment	N/A	Yes	No	Comments
People	Identified primary site lead (manager, owner, representative)	☐	☐	☐	
	Contacted primary site lead by phone to discuss pilot, schedule site visit, etc.	☐	☐	☐	
	Identified user communities at or near the site	☐	☐	☐	
	Contacted user community leaders to schedule informational meeting	☐	☐	☐	
Materials	One-pager geared towards site management summarizing the project and their role, benefits, and pilot team contact information	☐	☐	☐	
	One-pager geared towards the user community summarizing the project and their role	☐	☐	☐	
	A handout with a schematic of the intended solution	☐	☐	☐	
	A slide deck with additional detail to provide to site management	☐	☐	☐	
	A slide deck to present to community/site users	☐	☐	☐	
	Simple survey of user community to understand current practices and potential barriers to adopting your solution	☐	☐	☐	

The **second stage of recruitment** involves follow-up activities with the site management to conduct a thorough examination of the overall site layout, structure, and existing individual toilets. If necessary, the contractor and the developer should jointly draw up plans for the required retrofitting activities. Signing a memorandum of understanding (MOU) at this stage is recommended to formalize the relationship.

The **third stage of recruitment**, if needed, will focus on making a similar pitch to site users to gain their buy-in and support. Activities also should transition to identifying key resources and key partners in the area that are required for the pilot.

Category	First Stage of Recruitment	N/A	Yes	No	Comments
People	Completed detailed site walk-through to determine retrofitting and site modifications required	☐	☐	☐	
	Completed follow-up meeting with site management regarding retrofitting plans, etc.	☐	☐	☐	
	Engaged with user community and received support for pilot; administered simple survey	☐	☐	☐	
	Identified key resources (e.g., workforce) and key partners (e.g., labs) to work with during the pilot	☐	☐	☐	
Materials	Detailed retrofitting plans collaboratively developed and agreed to by both parties	☐	☐	☐	
	Signed MOU with site management	☐	☐	☐	
	Signed MOU with other groups or partners	☐	☐	☐	