



TERMS OF REFERENCE FOR SASSTEP FIELD-TESTING GUIDELINE

KEY STRATEGIC AREA	KSA 9: Business Development and Innovation
THRUST	3: Business Development
PROGRAMME	13: SASSTEP
TITLE	SASSTEP Field-testing Guideline

Objectives:

- To provide a standardised field-testing guideline for local technology and commercialisation partners (LTCP).
- Provide standardised assessment and evaluation criteria for all field-test activities
- Contextualise field test requirements for local technology and commercialisation partners (LTCP).

Background:

The South African Sanitation Technology Evaluation Programme (SASSTEP) is an initiative funded by the Department of Science and Technology (DST) and the Bill and Melinda Gates Foundation (BMGF), with the Water Research Commission (WRC) providing programme implementation and support services. The programme aims to foster a local sanitation industry (manufacturing and services) that would increase access to proper sanitation, reduce pollution, improve water security, create jobs and entrepreneurial opportunities and contribute to the country's GDP.

The programme is aligned to the Department of Trade & Industry (DTI) Industrial Policy Action Plan (IPAP) strategy to address commercialisation, localisation and manufacturing by bringing on board capable commercial partners to provide an industrial support base for the local and regional markets. The intent of the programme is to support and accelerate the application and uptake of the new sanitation technologies through demonstration, testing and science-based improvements towards localisation and industrialisation.

The execution strategy of the programme involves matching making appropriate "Reinvented Toilet" Technology (RTT) solutions that are in the later stages of the technology readiness level (TRL 7-9) with local technical and commercialization partners (LTCPs) who have the capability and capacity to localise and commercialise the RTT. The ability of the LTCP to successfully conduct field testing was highlighted as a programme risk. Standardised assessment and evaluation criteria are therefore required for ease of monitoring compliance, ease of reporting and a benchmark to measure success or failure.

SASSTEP wants to develop a field-testing guidelines document that combines best industry practices, lessons learnt and possible pitfalls from previous sanitation demonstrations. This will then be followed with a workshop and discussion forum with the LTCPs and other stakeholders to ensure a clear understanding of requirements. The document should provide LTCPs with appropriate guidelines to assess its in-house capacity to conduct the demonstration or if it would be appropriate to outsource the service to a qualified third party. Majority of the RTTs fall under the non-sewered sanitation

systems (NSSS) and hence will be governed by the SANS 30500. The guidelines should include elements from SANS 30500 as well required laboratory tests to ensure compliance with the standard and if possible, provide groundwork for future SANS 30500 certification.

The document should also include guidance on site selection and preparation, community engagement and liaison guidelines as well as methods of user education and orientation. Attention should also be given to measuring user acceptance, gender intentionality, behavioural and culture aspects on how the end-users interacts with sanitation technology.

Requirements:

The aim of the demonstration phase of the programme is to test RTTs at the later stages of technology readiness in the field to ensure functionality, safety and user acceptability. To achieve this, assessment and evaluation criteria and benchmarks are required to judge performance. A guideline document is required to provide guidance to SASTEP LTCPs to ensure transparency, a scientific and standard approach to field testing and a clear understanding of success/failure requirements.

Once the demonstration phase is successfully completed, the LTCP will proceed to a localisation and commercialisation phase, where the lessons and data collected during the demonstration phase will be crucial in development of a value proposition, future business model, localisation and commercialisation plans. In this context, the value of a robust and well-structured field-testing protocol cannot be underestimated.

The assessment and evaluation criteria must also be geared to ensure uptake of the demonstrated sanitation technology. As such, the sanitation assessment and evaluation criteria must be aligned to existing legislation, regulation and applicable standards to ensure that there are no legislative and regulatory barriers for the sanitation technology.

The proposed field-testing guidelines document shall include, as a minimum, the following:

- **Functionality assessment**
 - Product description
 - Overview of process design
 - Visual inspection
 - Applicable standards
 - Assess structural and mechanical performance
 - Process performance
- **Evaluation Criteria**
 - Safety
 - Health
 - Acceptability
 - Environmental performance
 - Reliability
 - Cost (including lifecycle costs)
 - Gender intentionality
- **Laboratory testing requirements**
 - Tests and analysis
 - Frequency of tests
 - Reporting
 - Certified laboratories
- **Site selection and preparation**
- **Community liaison and engagement**
- **User education and orientation**

User Acceptance

User acceptance is a crucial outcome of field-testing and the guideline document should include guidance on how to ensure pitfalls that could result in user rejection is minimized through education and other means.

Standard survey and questionnaires that will be used in the collecting user responses and used to measure interaction with the technology should be included in the scope of the document.

Gender Intentionality

Understanding and documenting learnings around how the male and female gender interacts with the sanitation technology and/or solution is required. The aim is to highlight features of the technology that benefits or prejudices a particular gender group. Collation of this information would assist in future development and localization of the technology. Focus should be given to highlighting features that benefit/empower and prejudice/drawback women and girls.

Deliverables:

1. Comprehensive field-testing guideline
2. Templates for results reporting, weekly/month report, laboratory report, final field test report
3. Standard user acceptance survey
4. Workshop(s) with key LTCPs and other stakeholders

Time Frame: 3 months

Budget: R500 000