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Evaluation 2025/ExP-2

SDC's Ex-Post Evaluation: The Safe Resource Recovery and Reuse (RRR) in Uganda

Project No. 7F-08146 (2011-2020)

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Commissioned by the Specialist Service Evaluation and Controlling
of the Swiss Agency for Development and Cooperation (SDC)

Contents:

Donor	SDC – Swiss Agency for Development and Cooperation
Report title	Ex-Post Evaluation: Project: The Safe Resource Recovery and Reuse (RRR)
Geographic area	Uganda
Sectors	140 Water Supply & Sanitation
Language	English
Date	July 2025
Author	Nordic Consulting Group (NCG), Jemtelensgade 1, 2300 Copenhagen, Denmark Mr. Carsten Schwensen, Team Leader Ms. Louise Scheibel Smed, Evaluation Expert Mr. Swaib Semiyaga, Water and Sanitation Expert (Kampala based) Mr. Erik Hedegaard Knudsen, Data specialist

Bern, September 2025

I Evaluation Process

The Swiss Agency for Development and Cooperation (SDC) is part of the Swiss Federal Department of Foreign Affairs (FDFA) and implements Switzerland's official development assistance, with head office in Bern.

Evaluations commissioned by the SDC's Board of Directors were introduced in 2002 with the aim of providing an independent assessment of SDC activities. These Evaluations adhere to the OECD DAC Evaluation Standards and are part of the SDC's concept for implementing Article 170 of the Swiss Constitution, which requires Swiss Federal Offices to analyse the effectiveness of their activities.

The Evaluation and Controlling Specialist Service is responsible for mandating and managing large-scale independent thematic and institutional evaluations as well as evaluations of Swiss Cooperation Programmes. The Evaluation and Controlling Unit commissions the evaluation, taking care to recruit independent evaluators and manages the evaluation process. The responsibility for individual project evaluations on the other hand is assumed by the operational units both at headquarters and in the field. Since project evaluations are usually conducted mid or end-term of a project cycle with a focus on project steering and project planning, the OECD DAC criteria of Impact and Sustainability are often assessed at a likelihood level with limited suitability for accountability purposes in these two criteria. In 2024, the Evaluation and Controlling Specialist Service was therefore mandated to conduct a series of 8-10 ex-post project evaluations between 2025 and 2028 with a special focus on longer-term impact and sustainability. The evaluations conducted under this mandate will serve the evaluation purposes of institutional learning on the aggregated level, while they will at the same time strengthen accountability towards the Swiss Parliament and Public.

The present evaluation was carried out according to the evaluation standards specified in the Terms of Reference. The Evaluation and Controlling Unit oversaw the evaluation process, including validating the evaluation methodology as laid out in the Inception Report and commenting on the evaluation findings. Further details regarding the evaluation approach are available in the evaluation report and its annexes.

II Evaluators' Final Report

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Abbreviations

BMGF	The Bill & Melinda Gates Foundation's
CA	Contribution analysis
CBOs	Community-based organisations
CEDAT	College of Engineering, Design, Art and Technology
CWIS	City wide inclusive sanitation programme
EQ	Evaluation question
FSM	Faecal Sludge Management
FSTP	Faecal Sludge Treatment Plant
GAU	Gulpers Association of Uganda
GHG	Green House Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
IWMI	International Water Management Institute
KCCA	Kampala Capital City Authority
KPIs	Key Performance Indicators
KWSF	Kampala Water Sanitation Forum
MoU	Memorandum of Understanding
MUBS	Makerere University Business School
MWE	Ministry of Water & Environment
NWSC	National Water & Sewerage Corporation
NEMA	National Environment Management Authority
PPE	Personal Protective Equipment
PPP	Public Private Partnership
PT RRR	Process tracing Safe Resource Recovery and Reuse
RUWASS	Reform of the Urban Water and Sanitation Sector (GIZ funded programme)
SDC	Swiss Agency for Development and Cooperation
SME	Small and medium sized enterprises
SSP	Sanitation Safety Plan
TAOUEL	The Association of Uganda Emptiers Limited
ToC	Theory of Change

Executive Summary

Background, purpose and scope: This evaluation is the first of ten ex-post evaluations commissioned by Swiss Development Cooperation (SDC) to assess the long-term impact and sustainability of development interventions. The Safe Resource Recovery and Reuse (RRR) Project, funded by SDC and implemented in Kampala from 2015 to 2020 by GIZ, aimed to enhance sanitation through resource recovery, institutional development, and private sector engagement.

In Kampala, where sanitation challenges intersect with rapid urban growth, the RRR Project emerged as a bold intervention. Launched in 2011 by SDC as a global project, and later implemented locally within Kampala Capital City Authority (KCCA) from 2015 to 2020, the project sought to reframe sanitation not merely as a public health necessity, but as a gateway to environmental protection and economic opportunity. The project aimed to recover value from reuse of waste, transforming faecal sludge into fuel, fertilizer, and livelihoods.

Kampala's sanitation landscape was dire in 2015 when the project was initiated in Kampala. Over 95% of the urban poor relied on on-site sanitation, often shared among multiple households. Pit latrines filled quickly, and emptying them was expensive, unsafe, and largely informal. The continuous population growth has put even further pressure on Kampala's sanitation. The city's untreated waste contributed significantly to pollution in Lake Victoria, and the health risks, especially for women and children, were mounting. The RRR Project responded with a dual focus: strengthening institutional frameworks and piloting business models for safe reuse. It was an ambitious undertaking, grounded in local realities and informed by global best practices.

This ex-post evaluation, conducted five years after project completion, revisited the project's legacy its achievements, its challenges, and the lessons it offers for future interventions. A mixed-methods approach was employed, combining contribution analysis and process tracing to assess causal pathways. A literature and document review, more than 40 in-depth stakeholder interviews and focus group discussions, and several site visits to treatment plants, business sites and neighbouring cities were conducted.

Institutions first, businesses second: One of the most consequential decisions made during implementation was a strategic pivot. While the RRR project initially emphasised business development, particularly from reuse of faecal sludge, it quickly became clear that without a robust institutional foundation, these businesses would struggle to survive. The shift toward institutional strengthening proved transformative.

By 2020, Kampala had adopted the Sewerage and Faecal Sludge Management Ordinance and developed a comprehensive Sanitation Improvement and Financing Strategy. These frameworks provided clarity on roles, responsibilities, and standards, essential ingredients for scaling sanitation services. The Kampala Water Sanitation Forum (KWSF) was established to coordinate stakeholders, and a call centre was launched to connect service providers with clients, increasing transparency and demand. Equally pivotal was the collaboration with Makerere University's College of Engineering, Design, Art and Technology (CEDAT). Research conducted through CEDAT informed policy briefs, guided strategy development, and helped institutionalise the RRR agenda in academic curricula. Today, KCCA staff are pursuing PhDs at CEDAT, a testament to the enduring partnership between research and policy.

These institutional achievements laid the groundwork for systemic change. They enabled safer, more accountable sanitation services and created an enabling environment for public-private partnerships (PPPs) to flourish.

The complex reality of reuse businesses: The business component of the RRR Project was both promising and challenging. Five SMEs were supported to produce briquettes using faecal sludge. Technically, the process worked, but socially and economically, the challenges were steep. Cultural stigma around faecal sludge made marketing difficult. Workers feared

reputational damage, and customers were wary of products deriving from human waste. Access to land and drying space was limited, and financial services were out of reach. Without continued supply and delivery of free faecal sludge from the RRR Project, most businesses stopped using it altogether.

Today, only one company continues to use faecal sludge in its briquettes. Even then, production remains modest, and profitability elusive. Other companies pivoted to producing briquettes without sludge or ceased operations entirely. The evaluation underscores a hard truth: while reuse holds promise, it requires more than technical feasibility. It demands market development, cultural change, and sustained support. Despite these challenges, the business training provided by the RRR Project was well-received. Entrepreneurs gained valuable skills, and some applied them in other ventures. While the reuse businesses themselves may not have flourished, the capacity-building component planted seeds for future innovation. Business training and curriculum development at Makerere University Business School (MUBS), provided with support from the RRR Project, was also considered relevant and useful but was never adopted revealing a lack of full ownership to the project.

Five years later - what endures and what evolves?: Five years after project completion, many of the institutional reforms have not only endured but expanded. While the RRR project laid the foundation and piloted its implementation, other project support helped scaling it up to the entire city. As of today, the sanitation strategy remains a guiding framework for Kampala, and its principles have been replicated to other Ugandan cities like Mukono and Jinja. The associations for pit emptier in Kampala have grown in membership and continue to encourage formalisation and enforce standards among their members. The call centre, initially focused on pit emptying, functioned as a national emergency call centre during COVID-19 and now serves as a general public service hotline.

Health outcomes have improved in informal settlements, with fewer outbreaks of cholera and diarrhoea. The volume of faecal sludge collected and treated has increased, and demand from farmers for dried sludge as fertilizer remains high, though concerns about safety and long-term environmental impact persist. The academic legacy is also strong: CEDAT has embedded the RRR agenda into its Master of Science in Civil Engineering, and a new MSc in Sanitation and Wastewater is launching in 2025. Knowledge sharing across Sub-Saharan Africa continues with KCCA and its partners regularly engaging in peer learning exchanges (supported by other projects).

Sustainability, however, is uneven. Pit emptier licensing processes have stalled without external facilitation, and the phase-out of subsidies has made pit emptying unaffordable for many poor households. The business component remains fragile, and the enabling environment for reuse businesses is still underdeveloped.

Main Conclusions: The following main conclusions are drawn from the evaluation findings:

- ✓ The RRR Project remains relevant and coherent with national priorities and has catalysed further support and replication.
- ✓ Institutional achievements were robust and sustained; business outcomes were less effective but conceptually promising.
- ✓ Key outcomes have been scaled and replicated, with SDC's support serving as a strategic catalyst.
- ✓ Capacity strengthening results have been mixed - robust in academia and associations, weaker in ensuring SME sustainability.
- ✓ Long-term impacts are emerging, especially in health and environmental improvements, though food safety concerns persist.
- ✓ The Kampala sanitation model shows high replicability potential, especially in urban contexts with strong local leadership.

Reflections and key lessons: The RRR Project offers rich lessons for future interventions. Its adaptive management - shifting focus from business to institutions - was critical. Local ownership matters, and KCCA's leadership and the pre-existing partnership with CEDAT created fertile ground for change. The project demonstrated the power of a strong research-policy nexus, where evidence drives decisions and builds credibility.

PPPs thrived when incentives aligned and political will was present. Pit emptier associations showed that self-regulation is possible with the right structures and incentives are in place. But the evaluation also warns of fragility: without continued support, progress can stall. Reuse businesses remain a frontier, full of potential but fraught with challenges. Transparency dilemmas, cultural stigma, and market constraints must be addressed if such models are to thrive. Peer learning and benchmarking visits proved effective in scaling lessons, and the Kampala model is already being replicated both nationally and regionally. However, replication must be context-sensitive, especially in smaller municipalities with limited capacity.

1 Introduction

Nordic Consulting Group (NCG) has been awarded the mandate to conduct 10 ex-post evaluations in the period from 2024 to 2028 for the Swiss Agency for Development and Cooperation (SDC). The aim of the mandate is to conduct ex-post project evaluations with a special focus on longer-term impact and sustainability. The evaluations conducted under this mandate will strengthen accountability towards the Swiss Parliament as well as serve the purposes of strategic steering and institutional learning.

A kick-off meeting was conducted with SDC in February 2025. It was clarified that specific Terms of Reference (ToR) will not be developed for the individual evaluations to be conducted. Instead, the general ToR for all evaluations will be applied across the evaluations under the mandate, supplemented with tailored questions/issues of particular relevance for each specific evaluation. These were agreed upon during the inception phase.

This Report concerns the first evaluation under the mandate: “The Safe Resource Recovery and Reuse” (RRR) project in Uganda, which has been selected as one of two projects to be evaluated first under this mandate. The RRR project was initiated in 2011 (first phase) as a global project and from 2015 it was implemented in Kampala, Uganda (second phase) and finalised in 2020. Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) was the implementing partner in Kampala. SDC followed the project from Bern as they have no cooperation office in Uganda.

The evaluation has been conducted by a NCG evaluation team composed by four experts:

- Mr. Carsten Schwensen, Team Leader
- Ms. Louise Scheibel Smed, Evaluation Expert
- Mr. Swaib Semiyaga, Water and Sanitation Expert (Kampala based)
- Mr. Erik Hedegaard Knudsen, Data specialist

1.1 Structure of the report

Following this introduction, the key approaches and methods applied are briefly outlined in Chapter 2 (with more detailed elaboration in Annex 2). Chapter 3 includes a presentation of the background for the project and in Chapter 4 the achievements at the time of project completion (2020) are presented. In Chapter 5 ex-post findings are presented and analysed with emphasis on the continued relevance, coherence, impact trajectories/impact and capacity strengthening/sustainability aspects. Finally, Chapter 6 contains the conclusions and lessons learned from the evaluation.

2 Key Approaches and Methods

This chapter briefly outlines the overall analytical framework, including an overview of the key approaches and methods applied. A more detailed approach and methodology is included in Annex 2. Overall, the Evaluation makes use of a *mixed-methods approach*, combining quantitative data with qualitative methods. Below, the key approaches and methods that have been applied are briefly presented.

Key approaches to results assessment

Use of a theory-based approach: Given the complexity and nature of this evaluation, a theory-based approach has been applied, enriched with practical examples/cases from the supported interventions. A core element in this approach has been the reconstructed RRR Project Theory of Change (ToC) (Figure 3) and the results framework. Together, they illustrate and explain how the different project interventions jointly were expected to lead to results and catalyse change processes. It has allowed this Ex-Post Evaluation to conduct a systemic assessment of how the different project elements - individually and jointly – have contributed to achievement of results, both during and after project completion.

Evaluation Matrix. The theory and ToC analytical framework is directly interlinked to the Evaluation Matrix and Evaluation Questions (EQs) - see blue box below (EQs) and Annex 1 (matrix). The matrix includes all EQs, judgement criteria/indicators and means of verification through methods and sources of data collection and analysis, linked to each EQ. In this way, the ToC framework is linked directly to the overall EQs in the ToR as well as to the unfolded sub-questions. While main focus in the evaluation is on addressing impact and sustainability aspects, as well as different capacity strengthening dimensions, broader effectiveness, relevance and coherence issues are also being addressed to ultimately extract wider impact/implications and the lessons learned from the RRR project.

The main Evaluation Questions (EQs)

EQ 1:	What were the main achievements (outcomes) at the time of project completion?
EQ 2:	To what extent are the project outcomes still relevant and aligned with similar/related interventions?
EQ 3:	To what extent have the outcomes achieved been sustained, scaled-up or replicated 3-6 years after project completion?
EQ4:	How has the project contributed to strengthening of capacities and to what extent have these been sustained?
EQ 5:	Which impacts have been achieved after project conclusion?
EQ 6:	What were the potentials for replicability in the same geographical context or elsewhere?

Focus on contribution assessment: The Ex-Post Evaluation focuses on the *contribution* of the RRR Project to results/changes. In view of the complexity and the relatively long timeframe to be covered by this evaluation, a combination of *Contribution Analysis* and *Process Tracing* elements is being applied to assess a "credible contribution claim" from the RRR Project to change/impact,[1] including by use of "contribution rubrics".[2] The credible contribution claim

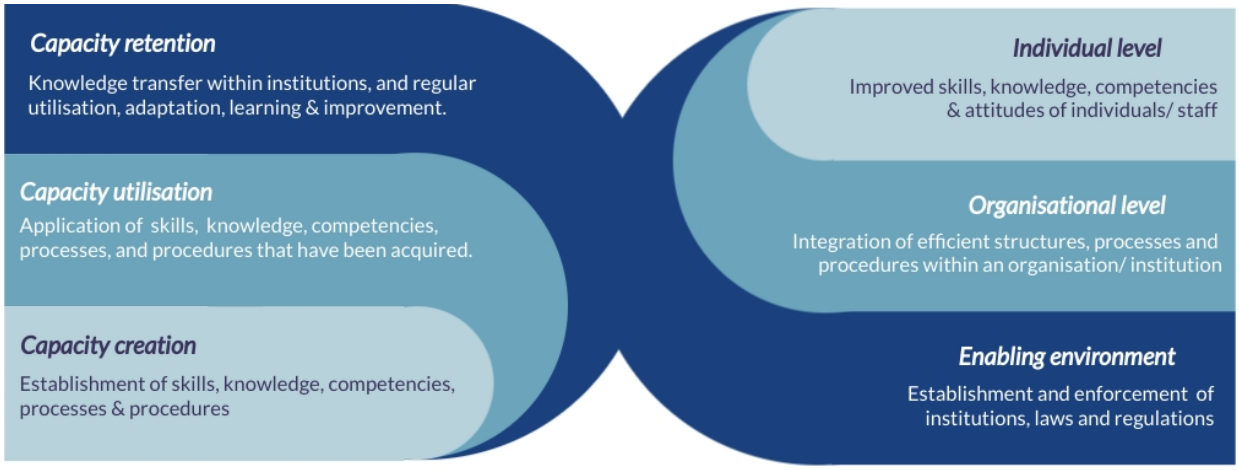
[1] More recent research and studies argue for the advantages of combining *Contribution Analysis* with other more qualitatively oriented approaches such as *Process Tracing* when evaluating development interventions' contribution to impact, see e.g. B. Befani. and J. Mayne (2014). *Process Tracing and Contribution Analysis: A Combined Approach to Generative Causal Inference for Impact Evaluation*.

[2] Inspired by T. Ashton (2019), *Contribution Rubrics*.

assessment takes point of departure in the overall RRR Project ToC combined with a "deep dive" into one more specific change pathways/impact trajectories linked to specific key project outcomes: the Kampala Sanitation Improvement and Financing Strategy (2020) and the related framework. This strategy framework is considered the major key outcome from the RRR Project (see Chapter 3) and has direct or indirect linkages to all other key outcomes from the project. As such, it seems the most obvious choice for a credible contribution claim assessment, as the analysis also relates to other key outcome areas and therefore provides a good overall assessment of the contribution from the RRR Project. For further background and explanation of the rational for applying a combined Contribution Analysis-Process Tracing approach for the contribution assessment in this Ex-Post Evaluation, as well as for a more thorough presentation of the contribution rubrics, please refer Annex 2. Overall findings related to the contribution assessment is presented in Chapter 5.2 and further detailed in Annex 3.

Analytical framework for assessment of capacity strengthening. The Ex-Post Evaluation has applied an analytical framework that takes into consideration various types and dimensions of capacity strengthening in its assessment of the effectiveness of the RRR Project support (Figure 1) to capture the different levels at which results may have been achieved (i.e. *individual level, institutional level & enabling environment*) and evidence for the depth/sustainability of results (i.e. *whether capacities were created, utilised, and ultimately retained)*.

Figure 1. Capacity strengthening analytical framework



Source: Capacity figure developed by the evaluation team

The analytical framework has helped identifying not only results but also the **processes, mechanisms, and contextual factors** that are likely to have shaped results. The assessment identifies influencing factors and sustainability, while also allowing for more nuanced exploration of challenges and unintended effects.

2.1 Key methods for data collection

The following key methods for data collection have been applied: i) Literature and document review. A comprehensive literature and document review has been conducted in relation to the RRR Project. This has included identification, screening, sorting and reviewing key existing literature in the form of studies, research, evaluations and reports covering the whole period of the Ex-Post Evaluation, in addition to documents provided by SDC. **ii) Key stakeholder interviews.** Key resource persons, involved in or with good knowledge of the RRR Project, were identified in both Switzerland and Uganda. This has included persons who could provide insight into relevant experiences from the project, both during the implementation period (up to 2020) as well as in the period after 2020. **iii) Focus Group Discussions (FGDs).** FGDs were mainly conducted during the field visit to Kampala to further exemplify and amplify the discussion of selected key topics with a larger group of key informants. The FGDs have

been useful to complement and validate/verify findings from interviews and site visits to two parishes and help to explain how links in the ToC have evolved. **iv) Site observations** were made by the evaluation team during an 8-day field visit to Kampala, both to private companies and communities. **v) Assessment of online data**. During the inception phase a thorough assessment of available data was conducted to provide an initial understanding of progress during and after the project period.

Table 1 provides an overview of stakeholders consulted.

Table 1. People consulted (per stakeholder type and gender)

Stakeholder type	Males	Females	Total
SDC staff members		3	3
Government officials	11	4	15
Development partners	4	3	7
Associations	5		5
Academia	3		3
Businesses	2	1	3
Training participants	2	1	3
Community representatives	2		2
Total	**29**	**12**	**41**

Source criticism

Source criticism has been applied in all aspects of the Ex-Post Evaluation, emphasising the importance of validation, transparency and reliability of evidence, reduction of bias etc. Since the evaluation team in some cases has relied largely on internal documentation and informants from SDC and project partners, who may have implicit or explicit interests in the outcomes of the Ex-Post Evaluation, it has been important to be aware of key stakeholders' level of independence/bias/vested interests, own relevant experience and knowledge when consulting through interviews and FGDs. To mitigate the risks for bias, the evaluation team has made sure that all statements made by stakeholders have undergone triangulation with other data sources. The same approach was extended to all evaluation findings: triangulation has been systematically undertaken of the different sources that have contributed to the analysis and each associated finding.

Challenges and limitations to the Evaluation

The evaluation team encountered and identified some challenges and limitations to the evaluation process: i) **Identification of key data sources.** The perceived usability of different online data sources for this evaluation varied and getting access to raw data and thereby allow for analysis only for Kampala was generally a challenge. This means, that the evaluation to a large extent has relied on trends analysis by combining multiple data sources. ii) **Identification of key stakeholders for interviews**. It was challenging in some cases to identify the relevant persons from different institutions and organisations with knowledge of the project implementation period, however through 'snowballing' and personal connections it became possible to identify and consult a good and critical mass of key stakeholders within all relevant project areas. The Ex-Post Evaluation made use of in-depth interviews and with key stakeholders' ample time was allocated (up to 3-4 hours) to cover the full ground. The evaluation team also contacted a number of stakeholders from organisations in the sector who were not directly supported by the project, and while some of these accepted an interview, others never went back. For some government authorities like National Environment Management Authority (NEMA) and Ministry of Health it was difficult to identify relevant persons who could provide a perspective on the potential impact from the RRR Project support.

3 Background

3.1 The Resource Recovery and Safe Reuse Project

The RRR project was launched in 2011 with the aim to increase resource recovery from the sanitation system while at the same time safeguarding public health and provide economic opportunities. As reflected in the Timeline (Figure 2), the first phase was research dominated and covered four countries in Asia, Latin America and Sub-Saharan Africa. It included two components focusing on: 1) Business models for RRR; and 2) Implementation of World Health Organisation's (WHO) guidelines for safe reuse of wastewater. While component 1 focused on identifying best practices on business models for RRR and developing feasibility studies in a few cities, component 2 focused on developing Safety Sanitation Plan (SSP) manuals based on the WHO guidelines for safe reuse of wastewater.

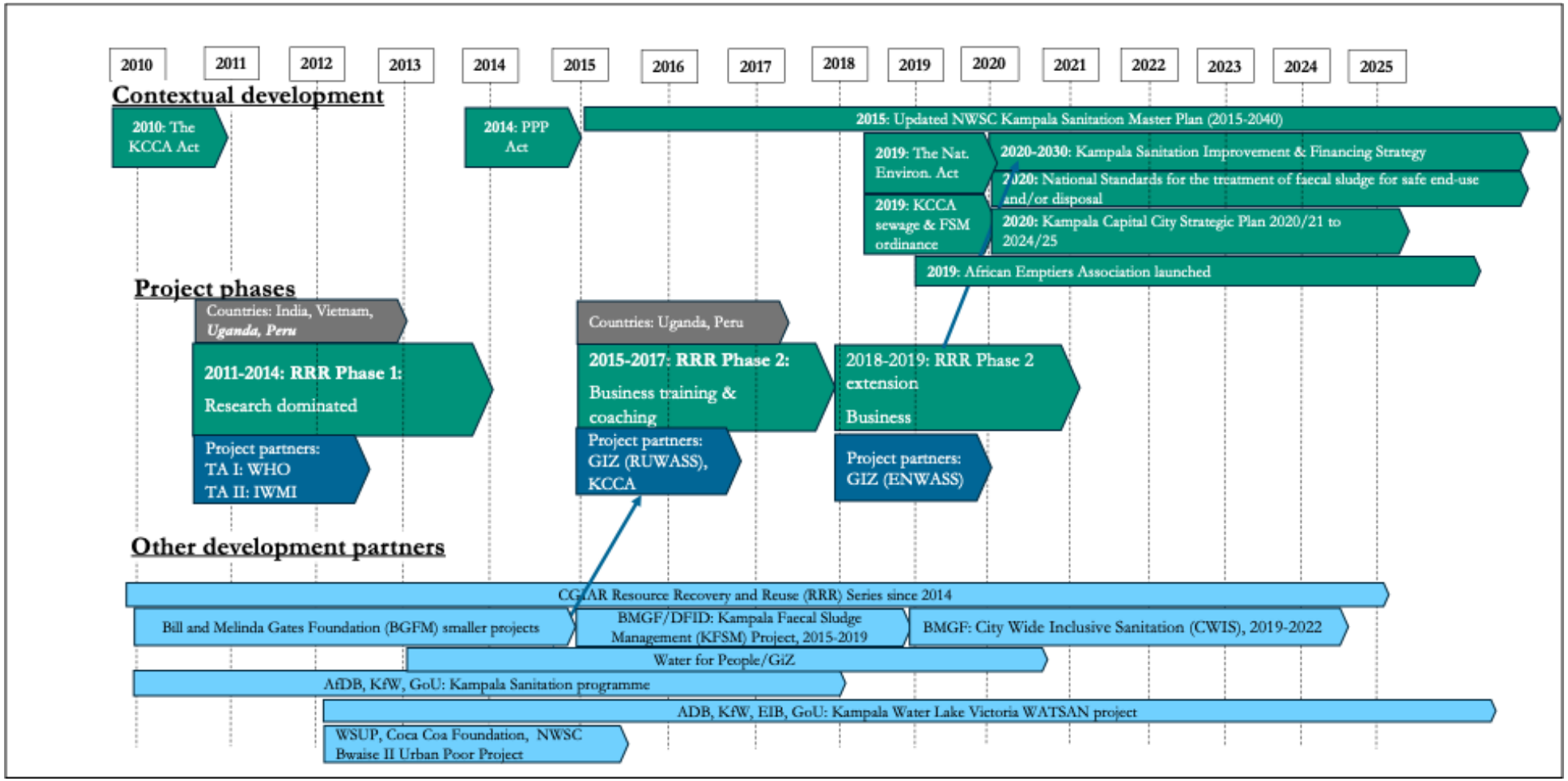
Phase 2 of the project concerned piloting RRR in Kampala and Lima. In Kampala, the project focused on the institutional development and the business development components. In Kampala, GIZ was the implementing partner in partnership with Water for People and Makerere University, who was engaged in training the small and medium sized enterprises (SMEs) on faecal sludge management and how to reuse it for business purposes. In the institutional development component, the main counterpart was the Kampala Capital City Authority (KCCA). KCCA is the legal entity established by the Ugandan Parliament in 2010 under the KCCA Act and is the body charged with governing the Capital City. KCCA was therefore a relative new institution when the RRR Project was initiated in Kampala. KCCA was put in the driver's seat to steer multistakeholder engagement in developing an institutional framework for the water and sanitation sector sanitation based on an enabling public-private partnership (PPP) framework.

Several initiatives were piloted to enhance private sector engagement with the aim of ensuring that faecal sludge is safely captured, contained, collected and transported to the treatment plant, treated and safely disposed of or reused. Innovation was required in order to address the challenge of most pits not allowing for emptying and different gulper and emptier technologies were tested. SMEs were trained to ensure the emptying business could be done in a safer and more environmentally friendly way and formalisation of the companies was encouraged. KCCA established a call centre to link service providers and customers and to make prices transparent. Different interventions were piloted in five pilot wards in Kampala to derive learnings on regulation of the private sector actors, which ultimately led to developing a system for regulation of the private sector. At the same time, the project supported research on reuse of faecal sludge in a safe manner and training of businesses and start-ups using faecal sludge. In the end, the business support component ended up providing technical support to five SMEs: Sustainable Energy Answers Company Limited (SEACO), Lubaga Charcoal Briquettes Cooperative Society (LUCHACOS), Kasavu Environmental Group (KEG), Best of Waste and Water for People's New Company called Tokosa (previously Chamuka). These companies were supported to include faecal sludge in briquettes and thereby creating an alternative fuel source that reduces deforestation pressure while addressing waste management challenges.

The budget for the two phases was CHF 6,2 million (USD 7,8 million) of which CHF 3,3 million (USD 4,1 million) was allocated to Uganda.

Figure 2 provides an overview of the timeline for the two project phases together with the main contextual developments and other development partners engagements in the sanitation sector in Kampala.

Figure 2. Timeline of the RRR Project and the contextual development

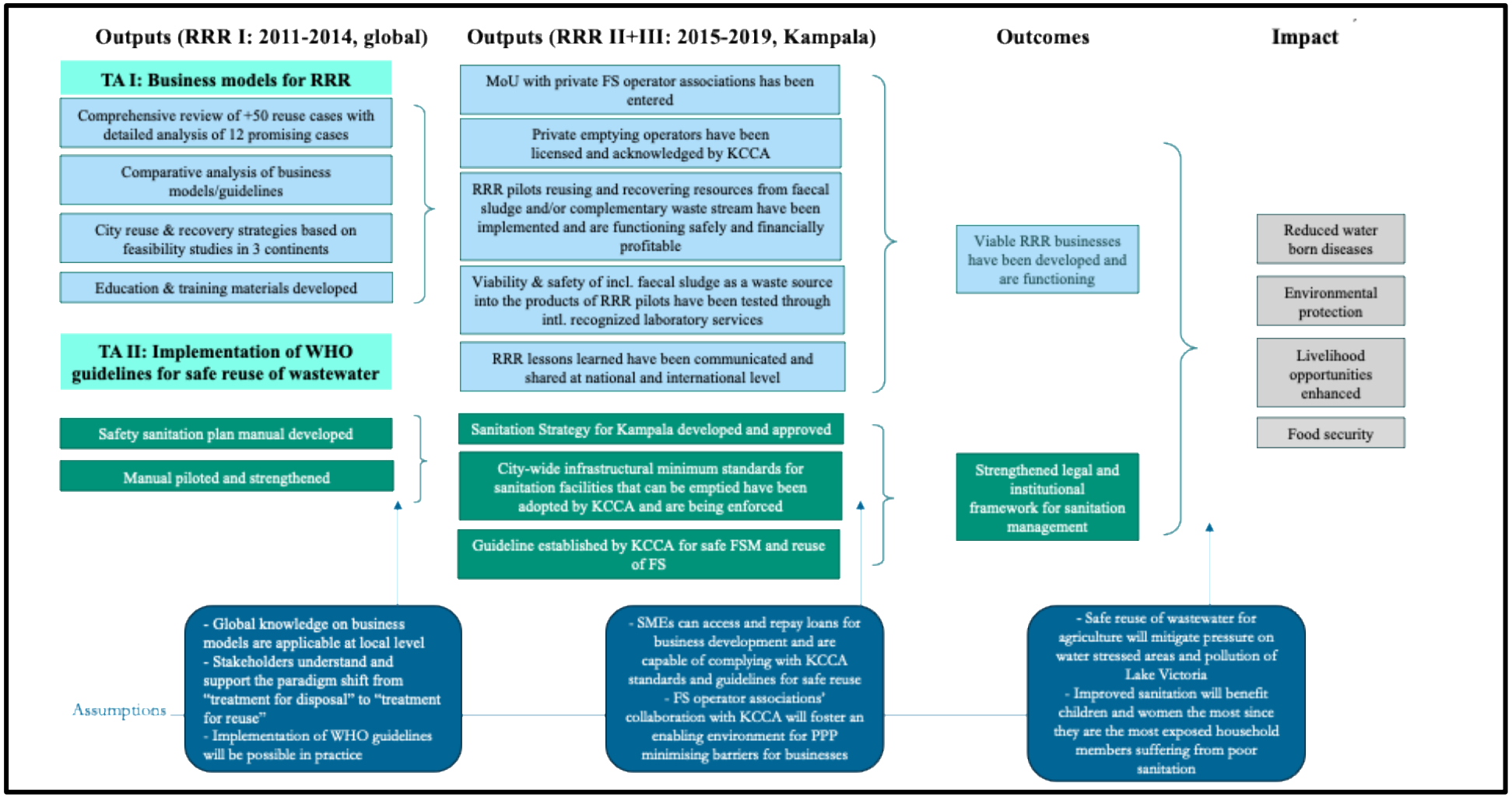


3.2 The project theory of change

To further understand the project intentions, a reconstructed ToC for the two project phases has been developed by the Ex-Post Evaluation (Figure 2). The project documents do not explicitly identify the impact targets to be achieved. In order to evaluate the impact of the project, the Ex-Post Evaluation has therefore had to reconstruct the intended impact based on available documentation. In the reconstructed ToC, reduction of waterborne diseases, environmental protection and enhancement of livelihood opportunities are shown as key impact targets. Livelihood opportunities are promoted through enhancement of the institutional framework for sanitation and business development and through direct support to SMEs. The focus on sanitation and more specifically the faecal sludge management is expected to contribute to environmental protection by reducing illegal emission. A World Bank study on Lake Victoria identifies Kampala as one of the highest Greenhouse Gas (GHG) emitting settlements in the basin, and the study reveals that Kampala's unsafely managed sanitation infrastructure contributes significantly to lake pollution, with untreated waste directly entering waterways. Thus, tackling the unsafe management of liquid waste is expected to reduce pollution in Lake Victoria in the longer run. At the same time, it is expected to reduce waterborne diseases, when waste entering the waterways is reduced. An explicit assumption of the ToC (dark blue boxes in Figure 3) is that women and children are more exposed members of a household, since they spend more time at home than men do. A reduction of waterborne diseases is therefore likely to have a greater impact on women and children.

Assumptions concerning the change processes have been identified and included in the ToC. While some were explicitly mentioned in the project documentation, others have been derived by the Ex-Post Evaluation based on the desk review and stakeholder consultations.

Figure 3. Theory of change of the RRR



4 Main achievements at the time of project completion

This Chapter recaps results at the time of project completion and discusses main outcomes achieved at the time of project completion. In order to further allow for conducting the contribution claim it is important to understand the steps prior to the adoption of the Kampala Sanitation Improvement and Financing Strategy (2020) why this section analyses the steps towards the adoption of the strategy. Table 2 provides an overview of key results, and the subsequent Chapter analyses these results. The blue boxes will indicate which EQs are being addressed in the different sections.

EQ 1: What were the main achievements (outcomes) at the time of project completion?

- What were the main outcomes achieved at the time of project completion?
- What were the main internal and external factors contributing / hindering achievement of the project objectives?
- In case any project outcomes were not achieved at the time of completion, have these outcomes been achieved ex-post?

Table 2. Overview of results achievement by the time of project completion

Intended outcome	*Achieved result*	
Viable RRR businesses have been developed and are functioning	• 3 out of 5 supported SMEs using FS for briquettes were still functional. This exceeds the target of 2 viable businesses but without supply of faecal sludge from Water for People they omitted to apply sludge in their briquettes. Also, lack of access to financial services limited their functionality and profitability.	
Viable FSM businesses (transporters and handlers) have been developed and are functioning	• MoUs were established between KCCA and two emptiers associations: The Association of Uganda Emptiers Limited (TAOUEL) and the Gulpers Association of Uganda (GAU). • 10 private faecal sludge transporters and handlers had acquired KCCA approval permits to operate in Kampala. • A call centre was established to link public request for sanitation services with private sector operators.	
Strengthened legal and institutional framework for sanitation management	• KCCA Sewerage and FSM Ordinance adopted (2019). • The Kampala Sanitation Improvement and Financing Strategy (2020) developed and adopted.	

4.1 Institutional development component

Finding 1. The institutional framework for faecal sludge management and private public-partnerships was considerably enhanced during the RRR project. The project provided important contribution in terms of research, analyses and convened public-private stakeholders to collaborate on solving severe sanitation challenges in Kampala.

The external review of the RRR Project (2020)[3] found positive results with regard to the enhancement of the institutional framework in the sanitation sector. Several steps towards enhancing the sanitation sector were realised. As mentioned above, and illustrated in the timeline in Figure 1, KCCA as an institution was rather newly established when the RRR Project was initiated. Management was however keen on addressing service delivery and most

[3] ECOPSIS (2020), *External Review of the project "Safe Resources Recovery and Reuse" (RRR).*

stakeholders consulted during the field visit indicated that the political willingness from KCCA management to prioritise waste and sanitation became crucial for the progress achieved. Another critical element of the project was its strong linkage to Makerere University and especially the College of Engineering, Design, Art and Technology (CEDAT). CEDAT had a strong relation to several Swiss research institution e.g. International Water Management Institute (IWMI), Swiss Federal Institute of Aquatic Science and Technology Sanitation (Eawag)/Water and Solid Waste for Development (SANDEC) that also formed part of the RRR Project. This collaboration continued during the project implementation period, where CEDAT, GIZ and implementing partners also managed to build a solid relationship with KCCA.

A Memorandum of Understanding (MoU) was signed between KCCA and CEDAT. According to stakeholders interviewed, the strong linkage between KCCA and CEDAT has allowed for a quite considerable policy influence which is also very evident today where two PhD students are employees from KCCA. The first study and policy brief from 2011 on Kampala's sanitation ended up having a very strong influence on subsequent research studies and policy development moving forward. The policy brief based on a representative survey of 1,500 poor households in Kampala clearly showed that 95% of Kampala's urban poor are not connected to the sewerage system but have access to an on-site sanitation facility. On average a pit latrine is shared among seven households or around 30 individuals. This raised risk of unhealthy conditions, and the study recommended establishing of municipal by-laws requiring landlords to provide their tenants with adequate sanitation. It was also found that 45% of sanitation facilities were abandoned after 5 years because they were full or have broken down.[4] The price for emptying the pits was on average between UGX 50,000 (USD 23) and UGX 100,000 (USD 46). This policy brief, additional research on waste supply and availability, and subsequent needs assessments and situational analysis supported by the RRR Project led to the realisation that an operational framework to guide service provision and sector regulation was needed,[5] and that the Kampala Master Sanitation Plan needed to be updated.

In 2013, GIZ collaborated with KCCA on establishing of a high-level coordinating steering committee - the Kampala Water Sanitation Forum (KWSF) - with funding from the GIZ RUWASS project. KCCA was managing the committee, where GIZ funded a staff member to coordinate the work of KWSF. Several government and non-governmental organisation (NGO) actors were gathered in the committee to allow for a better coordination. While the National Water and Sewerage Corporation (NWSC) is the utility responsible for Kampala's water supply and sewerage system; most of the population are served by on-site sanitation, which falls under the mandate of KCCA.[6] NEMA oversees compliance with environmental regulation and ensures compliance with waste transportation regulations and they commission licenses that allows private sector to obtain service agreements with public sector. Thus, a solid coordination is required which the KWSF contributed to.

Throughout stakeholder engagement, including both private sector and the different public authorities, a SSP was developed based on the WHO guidelines and a situational analysis was prepared for Kampala. The subsequent implementation of the SSP consisted of two complementary phases. The first phase focussed on research and informed priority interventions in the second phase.[7] The second phase, supported by the GIZ and the SDC, focused on the Kamwokya II ward, its community, and the emptying and transportation of

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4 Isabel Günther, Alexandra Horst, Christoph Lüthi, Hans-Joachim Mosler; Charles Niwagaba, Innocent Tumwebaze (2011), *Research for Policy: Where do Kampala's poor "go"?* Urban sanitation conditions in Kampala's low-income areas, July 2011.

5 A. G. Nkurunziza, Dr. N. L. Bateganya, J. Z. Byansi, J. Rokob, J. Busingye (2017), *FSM Case Study, Leveraging FSM to Close the Urban Sanitation Loop in Kampala,* Published by the Bill & Melinda Gates Foundation, August 2017.

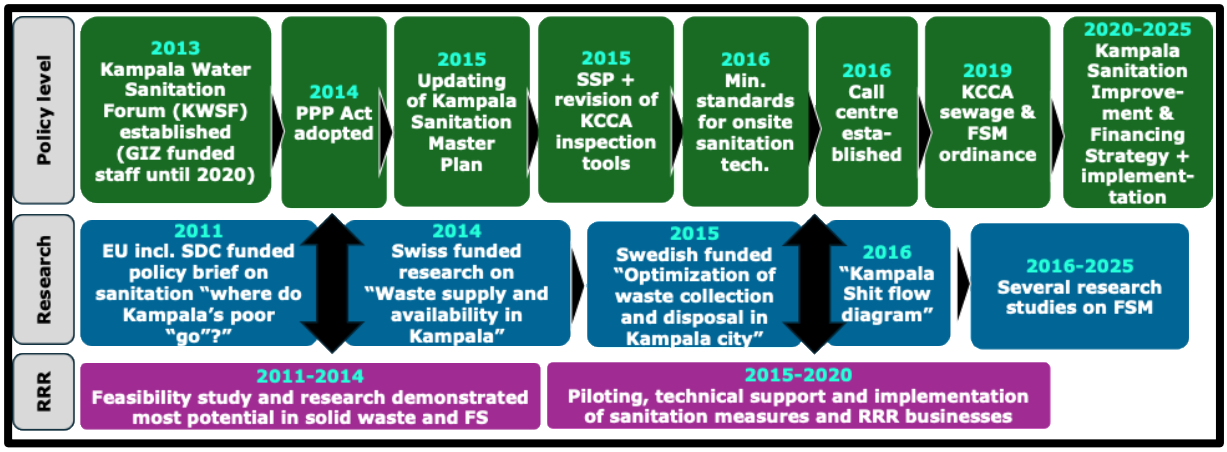
6 WHO (2016), *A Case Study from Kampala, Outcomes and Lessons Learned from Implementing Sanitation Safety Planning*.

7 WHO (2016), *A Case Study from Kampala, Outcomes and Lessons Learned from Implementing Sanitation Safety Planning*.

faecal sludge from the on-site sanitation facilities to the treatment plant.[8] A Sanitation Safety Committee was put in place to develop the SSP for the ward.

Key institutional processes towards results realised during the project period are illustrated in Figure 4.

Figure 4. Step-wise results leading to the enhanced framework for PPP in the sanitation sector



Source: The evaluation team has developed the figure based on interviews, review of documents and research

According to stakeholder consultations the development of the KCCA Sewerage and Faecal Sludge Management Ordinance reflected knowledge from research, stakeholder mapping and the situational analysis and was an essential step towards realising an enhanced institutional framework for the collaboration of public-private actors in addressing Kampala's sanitation challenges. The Ordinance was adopted in 2019 with full political support and without any political controversies. Stakeholders indicated that strong stakeholder engagement was key to this and that champions strategically situated within different partner authorities contributed to this smooth collaboration which, according to several consulted stakeholder, is not a common occurrence in Kampala.[9]

In 2020, the Kampala Sanitation Improvement and Financing Strategy was adopted with support from the RRR Project. This was seen as an important result in terms of complying with the existing legal framework although the opportunity to introduce a circular economy objective in the Strategy was not seized. Nevertheless, to have the Strategy in place was considered a key institutional result that allowed for a clearer overview of key actors in the sector, and which established targets and a monitoring framework to keep track of implementation. The Strategy was evaluated in 2024 which has been essential in establishing post project achievements (further discussed in Chapter 5).

8 WHO (2016), *A Case Study from Kampala, Outcomes and Lessons Learned from Implementing Sanitation Safety Planning*.

9 WHO (2016), *A Case Study from Kampala, Outcomes and Lessons Learned from Implementing Sanitation Safety Planning*.

Finding 2. Global research on reuse from phase 1 of the RRR Project allowed for adoption of global best sanitation practices in Kampala which has reduced fees for emptying pits and secured a stronger protection of pit emptiers. This has also been essential for formalising and growing the pit emptier profession.

According to the research from Phase I, establishing a call centre in Senegal had reduced emptying fees by 14% and increased volume of sludge that was delivered to treatment plants.[10] Based on this experience, a toll-free call centre for pit emptiers was established in 2016 in Kampala to link public request for sanitation services with private sector operators. Service providers were tracked through a GIS tracking application installed on their phones.[11] The call centre was not a bidding platform but call centre staff recorded prices in follow-up calls and was thereby able to provide customers with a market range for the services.[12] According to stakeholder consultations the call centre reduced the prices for costumers while ensuring more business for the private emptiers. The intention was that the economy of scale would increase the employment for private actors and thereby the higher demand and economy at scale compensated for the reduced prices.

The research in RRR Phase 1 found that mobile transfer stations had reduced transport distance by 12 km per trip in Addis Ababa, Ethiopia. Another key learning from the research was that scheduled desludging had reduced emptying fees and improved business operations in the Philippines.[13] Based on these experiences and a needs assessment it was decided to pilot the model in Kampala (Box 1). Initially, it was piloted in five parishes and managed by Water for People in collaboration with KCCA within the concept of a non-profit model and integrated with scheduled emptying. Two mobile transfer tanks were designed with aims of reducing transport distance, promoting bulk transportation and disposal of faecal sludge so as to reduce operational costs for gulper entrepreneurs and consequently the emptying cost borne by households.[14] As reflected in Box 1 the mobile transfer stations generated challenges for the communities and in the end the mobility was complicated and it was decided to instead introduce a

Box 1: From mobile transfer stations to the thick sludge Dumping Bay in Kampala: More than 60% of Kampala's population live in informal settlements, where large volumes of faecal sludge are produced but often remain uncollected. Access for large vacuum trucks is limited due to narrow, congested roads, and unlined pit latrines are notoriously difficult to empty. As a result, manual emptying and semi-mechanised gulper technologies have been used for these areas. However, these methods can only handle smaller volumes of thick sludge, making transport to distant treatment plants costly and inefficient. Therefore, mobile transfer station were piloted with trailer-mounted containers located close to informal settlements. Small-scale emptiers then deposited sludge into these units, which were subsequently transported in bulk to a faecal sludge treatment plant. While practical in concept, the approach faced challenges: there was often insufficient space to park the trailers within densely populated settlements, and residents complained about unsanitary conditions near the parked units. To mitigate these issues, the mobile transfer station was eventually moved to the Lubigi Treatment Plant, where thick sludge from unlined pits was delivered, diluted, and moved to the plant inlet by driving the full truck to the plant. However, working conditions remained poor, as emptiers had to climb onto trucks to discharge the waste, exposing them to unnecessary health risks.

[10] Swaib Semiyaga, Mackay A.E. Okure, Charles B. Niwagaba, Alex Y. Katukiza, Frank Kansiime (2015), *Decentralized options for faecal sludge management in urban slum areas of Sub-Saharan Africa: A review of technologies, practices and end-uses,* Resources, Conservation and Recycling 104.

[11] S. Singh; F. Laker, F.; N. L. Bateganya; A. G. Nkurunziza; S. Semiyaga; D. Brdjanovic (2022), *Evaluation of Business Models for Fecal Sludge Emptying and Transport in Informal Settlements of Kampala, Uganda*, Water 2022, 14, 2914.

[12] A. G. Nkurunziza, Dr. N. L. Bateganya, J. Z. Byansi, J. Rokob, J. Busingye (2017), *FSM Case Study, Leveraging FSM to Close the Urban Sanitation Loop in Kampala,* Published by the Bill & Melinda Gates Foundation, August 2017.

[13] S. Singh; F. Laker, F.; N. L. Bateganya; A. G. Nkurunziza; S. Semiyaga; D. Brdjanovic (2022*), Evaluation of Business Models for Fecal Sludge Emptying and Transport in Informal Settlements of Kampala, Uganda,* Water 2022, 14, 2914.

[14] S. Singh; F. Laker, F.; N. L. Bateganya; A. G. Nkurunziza; S. Semiyaga; D. Brdjanovic (2022), *Evaluation of Business Models for Fecal Sludge Emptying and Transport in Informal Settlements of Kampala, Uganda,* Water 2022, 14, 2914.

dumping bay at Lubigi Treatment Plant. Recognising the need for a safer, more efficient solution, the lessons from the mobile transfer station at Lubigi were later used to design and pilot a permanent thick sludge dumping bay. This dumping bay now acts as an intermediate hub where gulper operators can offload thick sludge for screening, dilution and storage before moved by vacuum truck to treatment plant inlet. The testing of different approaches and technologies generated key learnings for the sanitation sector across Sub-Saharan Africa and provides a good example of how the RRR Project was focused on innovating the sector.

The transfer tank technology and the call centre reduced the charges per barrel for the costumers to UGX 30,000, equivalent to around USD 14.[15] and even further during the COVID-19 pandemic.[16] This was a quite substantial reduction compared to the prices reflected in the Policy Brief from 2011 (between UGX 50,000 (USD 23) and UGX 100,00 (USD 46)).

Box 2: Steps in licensing of pit emptiers:

1. Recommendation letter from the emptiers' association and/or the Gulper Association Uganda.
2. KCCA is responsible for operational licensing and provision of Environmental Services Certificate.
3. NWSC is responsible for registration for discharge of FS at treatment plant.
4. NEMA is responsible for transportation licensing and enforcement of environmental standard.

KCCA's combination of formalisation of small businesses with access to new markets, through a call centre for pit emptiers was considered successful by the End Review.[17] Gulpers were not recognised as a profession prior to the project but was operating illegally and informally. As reflected in a research study conducted in 2015, the gulper business was highly associated with unsafe pit emptying. Hand tools like spades and buckets/cans were used to empty the pit. In some cases, persons emptying the pits used a ladder to go into the pit. This was usually practiced without personal protective equipment (PPE) like face masks, rubber boots, hand gloves and overalls; making manual emptiers susceptible to faecal related diseases.[18] In order to address the high risk of emptying pits the RRR Project trained and supported gulpers with PPE.

By capacitating emptiers SMEs to comply with health and environmental regulations and access to new equipment while at the same time creating a market for them, the call centre has strongly contributed to an increasing profession and sectoral growth. In order to become a service provider linked to the call centre, it requires a license which motivated service providers to formalise their businesses. By the end of the project period, 10 private faecal sludge transporters and handlers had acquired KCCA approval permits to operate in Kampala.

GAU was established in 2017 with 3 core objectives: professionalising pit emptying, financial growth, and unity among its members. Two years later the association included 18 entrepreneurs of which 10 of them had acquired KCCA licenses, thus acquiring formal recognition as important players. GAU charges a one-time entrance fee for new member companies of UGX 1 million (USD 280). This money covers training, company site inspection and running the association. In addition, each company pays a monthly subscription of UGX 10,000 to run the association activities. Besides that, several income generating activities have been implemented. A key income source is GAU's responsibility to run the fixed transfer station

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15 A. G. Nkurunziza, Dr. N. L. Bateganya, J. Z. Byansi, J. Rokob, J. Busingye (2017), *FSM Case Study, Leveraging FSM to Close the Urban Sanitation Loop in Kampala*, Published by the Bill & Melinda Gates Foundation, August 2017.

16 Enhanced incentives of improving sanitation were introduced in the COVID-19 period, where the gulpers were charging 20,000 UGX and KCCA topping it up. However, this subsidy affected the market, where people took this to be the normal prices for the barrels, not knowing KCCA added some fees.

17 ECOPSIS (2020), *External Review of the project "Safe Resources Recovery and Reuse" (RRR).*

18 Swaib Semiyaga, Mackay A.E. Okure, Charles B. Niwagaba, Alex Y. Katukiza, Frank Kansiime (2015), *Decentralized options for faecal sludge management in urban slum areas of Sub-Saharan Africa: A review of technologies, practices and end-uses*, Resources, Conservation and Recycling 104, page 109-119.

(dumping bay)[19] constructed at Lubigi Treatment Plant to ease disposal of faecal sludge by Gulpers (see above). At the dumping bay, solid waste is separated from the faecal sludge, which is a responsibility for GAU to manage. The dumping fees at the bay is currently UGX 3,500 per barrel of faecal sludge.

4.2 Business component

Finding 3. The business support component allowed for tailored support to companies interested in building businesses within reuse. While this component was deemed highly relevant it proved a challenge to build viable businesses on waste reuse at the time of project completion.

Besides the pit emptiers businesses a key component of the RRR Project was supporting businesses developing businesses focusing on reusing faecal sludge. In the end five companies were supported with equipment, however a more substantial training of much more participants were conducted prior to this stage. As reflected in Table 2, three of the five supported companies were still operating when the project ended. The established target was to have two viable businesses so in this sense the target was achieved. However, the project end-Review found that while the five businesses supported for making briquettes had gained in solidity and technical and financial competences, they did not increase their profitability of product reuse.[20]

Box 3: Best of Waste Limited.

Best of Waste Limited is a Ugandan company that has been turning organic waste into charcoal briquettes since it was registered in 2013. In 2018, they teamed up with Water for People to test the idea of using faecal sludge as a raw material in briquette production. The process involved obtaining dried faecal sludge from Lubigi Treatment Plant, carbonising it in drums, then mixing it with binders like clay and molasses to make briquettes. This concept worked technically, and briquettes were produced. However, the stigma around faecal sludge proved a major hurdle. The company's workers were hesitant to use faecal sludge raw material, worrying that word would spread and damage their company reputation. As a result, the faecal sludge briquettes were never sold commercially; instead, Water for People took the finished product.

According to consultations with participants of the business training and stakeholders involved, the business training was solid, comprehensive and useful. The steps completed included: 60 participants that were introduced to the Business Model Canvas, an entrepreneurial tool for describing, analysing, and designing business models; then 16 Start-Ups/SMEs successfully completed the training, learned and applied to (amongst others); and 4 out of the 16 Start-Ups/SMEs, that successfully completed the RRR Smart Start-Up Programmes, submitted documents for the RRR Business Ideas Competition. It is noted however that the companies who ended up getting equipment from the project were not necessarily the same companies who had completed the other training sessions. SEACO, LUCHACOS, KEG, Best of Waste and the Water for People company Tokosa received equipment. While the Ex-Post Evaluation tried to further explore the rationale for this decision, it was not fully possible to unpack this as the documentation on participants from the training was no longer available. One of the reasons for this was that it was decided to focus on briquettes since Water for People was already engaged with this business and it was assessed to be more effective to focus efforts.

One of the training participants who had participated in the business training shared that it had been made clear for him along the training that he was not likely to be selected since his focus was on reusing plastic for arts which would not be supported with equipment. Nevertheless, he shared that the business training had opened his eyes to other areas of reuse and after the

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19 E. K. Musabe, E. K. (2024), *Review of the progress of implementation of the Kampala Sanitation Improvement and Financing Strategy (2020-2030),* vol. 2024.

20 ECOPSIS (2020), *External Review of the project "Safe Resources Recovery and Reuse" (RRR).*

training had ended, he had explored several other areas including biogas production for further entrepreneurship.

The formalisation processes were also more challenging than expected and only one company had acquired a trading license. No businesses had obtained permits or licensees to handle sludge waste from NEMA and KCCA.[21] The external review also found that lack of access to financial resources provided a key obstacle for the RRR SMEs.[22] They lacked working capital which hampered business development. Small profits earned from selling small quantities of briquettes limited the acquisition of modern equipment that could step up productivity and consequently increase sales. As reflected in the ToC, there was an assumption that companies could access funding and the RRR Project did not provide any grants for the businesses. Instead, technology was provided to allow for the businesses to grow. Nevertheless, a key learning from the end-review that the lack of financial support proved a challenge for the companies' ability to become profitable.[23]

Another challenge was access to and treatment of faecal sludge. During project implementation Water for People delivered the faecal sludge to the entrepreneurs who would then have to further dry it to make it fully safe for using it in the briquettes. This requires space which is often a challenge in urban areas like Kampala. Access to land and permission to build required structures is a huge challenge that has meant setbacks and at times the end of several companies. This is clearly reflected in the lessons learned study from the RRR Project which found that micro- and small-sized briquettes making businesses in Kampala and surrounding lack proper spaces to operate.[24] This was also confirmed by SMEs consulted during the field visit where two out of the four businesses consulted indicated to have challenges concerning land (refer Table 6).

The company Best of Waste Limited (Box 3) provides a good example of some of the challenges encountered by supported businesses. The cultural stigma around using faecal sludge in their production became a challenge and three out of the four companies indicated that they could not tell their customers that the briquettes contained faecal sludge. This provided an ethical question to be transparent about their production with the risk of not getting customers. Several of the companies opted to not informing customers about the content of the briquettes and in the case of Best of Waste they decided not to continue mixing faecal sludge into the briquettes when the project ended.

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21 GiZ, Water for People and Cewas (2020), *Circular Economy for Sanitation - Resource Recovery and Safe Reuse Business Development Experience in Uganda Opportunities, Challenges, Lessons Learnt and Key Recommendations for Effective Business Development Services*.

22 ECOPSIS (2020), *External Review of the project "Safe Resources Recovery and Reuse" (RRR).*

23 ECOPSIS (2020), *External Review of the project "Safe Resources Recovery and Reuse" (RRR); GiZ, Water for People and Cewas (2020), Circular Economy for Sanitation - Resource Recovery and Safe Reuse Business Development Experience in Uganda Opportunities, Challenges, Lessons Learnt and Key Recommendations for Effective Business Development Services*.

24 GiZ, Water for People and Cewas (2020), *Circular Economy for Sanitation - Resource Recovery and Safe Reuse Business Development Experience in Uganda Opportunities, Challenges, Lessons Learnt and Key Recommendations for Effective Business Development Services*.

5 Ex-post Findings

This Chapter focuses on achievements in the 5 years after project completion. First, it considers the continued relevance and coherence elements of the project (5.1), then in 5.2 the contributions towards impact analyses SDC/GIZ's contribution claims to achieving the Kampala Sanitation Improvement and Financing Strategy and the sector framework.

EQ 2: To what extent are the project outcomes still relevant and aligned with similar/related interventions?

- How well do the achieved outcomes align with local and national level priorities (i.e. official priorities) and interventions?
- To what extent have the supported interventions been compatible with interventions of other actors in the same geographic/thematic context?

5.1 Continued relevance and coherence

Finding 4. Improving sanitation and enhancing the framework for public-private partnerships (PPPs) have remained highly relevant and aligned with the political agenda.

Uganda's escalating waste crisis, especially in major cities like Kampala, demands urgent adoption of circular economy (RRR) solutions. Political momentum is clear: the 2024 National Waste Management Policy, National Development Plan IV (NDP IV) and Uganda Vision 2040 strategies promote integrated waste reduction, resource recovery, and pollution prevention. Incidents like the Kiteezi landfill (main Kampala landfill used for only waste disposal) collapse in August 2024 which killed more than 30 people[25] have led to political action and adoption of national policies to diversify disposal methods and embrace reuse-focused strategies. The incident led to dismissal of the KCCA management based on a report released by the Inspector General of Government which provided evidence of criminal negligence. The collapse of the landfill has ever since led to a piling up of garbage in many parts of Kampala.

Sanitation is central to Uganda's urban sanitation framework. Parliament and the Ministry of Local Government have raised sanitation and hygiene to core objectives, thus elevating sanitation in policy, budget planning, and legislative tracking. This emphasis aligns with Uganda's Public Health (Amendment) Act, 2023, which requires safe management and disposal of human waste to prevent disease outbreaks, while the Safe Resource Recovery & Reuse Agenda helps protect soil and water resources from pollution. According to stakeholders from the Ministry of Health several actors including KCCA provided important input which influenced inclusion of indicators on faecal sludge in the Act.

Kampala is witnessing continued use of dried sludge from treatment plants as an organic soil amendment and some pilots in carbonized briquettes production, as well as animal feed through black soldier fly larvae. No dried faecal sludge has been reported to be disposed of without reuse. However, the following implementation gaps exist:

- Limited faecal sludge management infrastructure exists beyond Kampala; most municipalities and towns still lack treatment facilities and rely on informal emptying practices - although the Ministry of Water and Environment is in process of clustering towns and providing treatment infrastructure, as well as helping in development of town sanitation plans to improve sanitation situation.

[25] The Independent Uganda (2024), *Museveni fires KCCA's Dorothy Kisaka*, September 24, 2024, assessed on June 30, 2024. https://www.independent.co.ug/[redacted]-breaking-news-museveni-fires-kccas-dorothy-kisaka/

- Behaviour change and community engagement on resource recovery & reuse in sanitation remain underdeveloped. Local authorities need partners and funding to roll out refresher training, community sensitisation campaigns, and WASH committees to strengthen uptake.
- Financing and enforcement capacity for faecal sludge management regulations are still weak. However, benchmarking visits, new sanitation budget lines, and donor-supported city sanitation strategies show that steps are being taken to close this gap and turn policy ambition into practical, city-wide faecal sludge management systems.

Sanitation has continued as a highly relevant priority of KCCA, and while the reuse agenda has been more challenging to implement there are indications that this is now picking more up. For instance, it is now a requirement for feasibility studies of new treatment plants to consider feasibility of various reuse options and allocation of space at the plant for reuse processing.

Finding 5. Strong coherence and knowledge sharing with the Bill and Melinda Gates Foundation (BMGF) City wide inclusive sanitation programme (CWIS) and several examples of BMGF scaling piloting from the RRR Project to the entire Kampala City

The Bill and Melinda Gates Foundation City wide inclusive sanitation programme (CWIS) was implemented from 2019 to 2023 and is a continuation of the Kampala Faecal Sludge Management (KFSM) Project on Improving Faecal Sludge Management for On-Site Sanitation in Kampala City. The KFSM was implemented from 2015 to 2019 when the RRR Project was also running. According to stakeholders the RRR Project and KFSM Project/CWIS Programme was fully aligned and GIZ and BGMF were both key partners of the KWSF as mentioned above. According to GIZ staff there were several examples of BGMF awaiting research results from the RRR Project before deciding whether or not to scale an intervention. The CWIS Programme was scaled to the entire capital and several elements were originally developed in the RRR Project. These included further enhancing the call centre, uptake and scaling of the Weyonje App to develop a dashboard with key sanitation indicators, community and private sector engagement, collaboration and training with emptiers associations, promoting PPE etc. Thus, a very similar programme as the RRR project but with a larger scope. Both projects focused on the institutional framework for PPP.

As the RRR Project, the CWIS Programme was implemented by KCCA. Both the RRR end of project report and the end-Review emphasised a need to follow up with capacity development of KCCA.[26] The strong focus on capacity strengthening of KCCA was therefore highly relevant and in line with experiences from one project to another. The budget for the CWIS was CHF 3,5 million for the four years (USD 4,4), thus a slightly higher budget than the RRR Project which was CHF 3,3 million (USD 4,1 million).

[26] ECOPSIS (2020), *External Review of the project "Safe Resources Recovery and Reuse" (RRR).*

5.2 Contribution towards impact

EQ 5: Which impacts have been achieved after project conclusion?

- To what extent have the expected impacts from the project support materialised in the period after project completion?
- What has been the project's contribution to achievement of these impacts?
- Has SDC's support served as a catalyst for further support / funding? If yes, how?
- Have any unintended positive or negative impacts emerged after project completion as a consequence of the project?

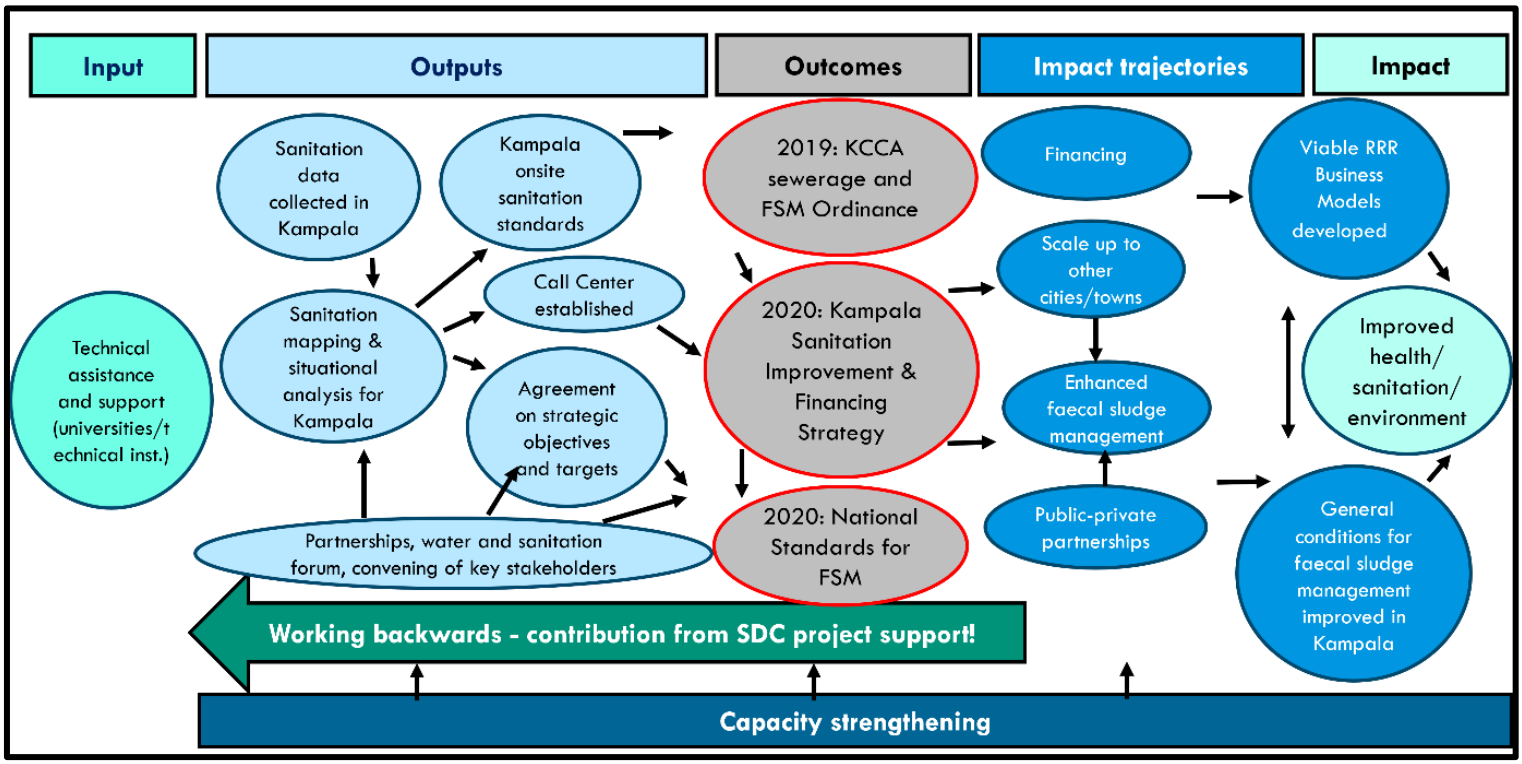
EQ 3: To what extent have the outcomes achieved been sustained, scaled-up or replicated 3-6 years after project completion?

- Are the achieved project outcomes still present 3-6 years after conclusion of the project? If not, why not?
- Are the approaches, plans and tools developed still utilised by project partners and beneficiaries and if so, what factors enable or hinder their continuous application?
- What strategies or factors have facilitated or hindered the scaling process?

EQ 6: What were the potentials for replicability in the same geographical context or elsewhere?

As mentioned in Chapter 2 (Approach and Methods), the Ex-Post Evaluation is focusing the credible contribution claim assessment from the RRR Project around the Kampala Sanitation Improvement and Financing Strategy and the related framework. According to the recent Progress Review of the strategy (2024), there is evidence that the strategy still constitutes an important guiding framework for planning and implementation of sanitation improvements in Kampala. This provides the Ex-Post Evaluation with an opportunity to, on the one hand, assess the significance of the RRR project contribution to this specific key outcome (development and adoption of the strategy) while, on the other hand, assess the extent to which there are signs that the strategy implementation is leading to development impact (through impact trajectories). Figure 5 illustrates the contribution claim assessment framework related to the strategy, including the backward and forward linkages.

Figure 5. Contribution claim assessment framework



Source: Developed by the evaluation team based on stakeholder consultations, interviews and document review.

The credible contribution claim

Finding 6. Overall, there is evidence that the RRR Project was a major contributing factor to preparing for development of the Kampala Sanitation Improvement and Financing Strategy and the related framework up to 2020, and that the subsequent implementation of the strategy framework has resulted in visible progress on key change pathways (impact trajectories) towards achievement of longer-term development impacts.

A first step in this assessment process has been *working backwards* to assess the significance of the contribution to assess if there has been a credible contribution from the RRR Project to the strategy development and the related framework (KCCA Sewerage and FSM Ordinance, the SSP, minimum standards for onsite facilities). The analysis in Chapter 4 provided evidence that the RRR project has contributed significantly to development and adoption of the strategy and the related framework up to 2020. The critical causal pathways and key assumptions reflected in the reconstructed RRR project ToC are largely confirmed by the data and information collected. This includes assumptions related to the critical roles played by different key actors - such as local and central government authorities, private sector and other development partners - at different stages in the process. The time sequencing and intervention logic is also largely confirmed. As discussed in Chapter 4, SDC was engaged back from 2011 in supporting a number of the key stepping stones eventually leading to the strategy development process. While SDC has not been the major funding partner, the value of SDC's complementary and supporting role over nearly a decade up to the strategy development in 2020, is seen as a major *process* contributing factor, in particular addressing the linkages between research and policy development and stakeholder convening.

From the evaluation team's field visit to Uganda and the supporting documentation, it is also evident that some of the major changes and improvements that have taken place in relation to faecal sludge management in Kampala since 2020 can be contributed to the strengthened research, legal and institutional framework for sanitation management that took place with SDC support up to year 2020, manifested through development of the sanitation strategy and framework. When looking at what has happened after the RRR Project completion in 2020, progress is evidenced in a number of change pathways (impact trajectories) directly linked to the implementation of the sanitation strategy and related framework. Some of these trajectories are necessary steppingstones and supporting elements to achieving ultimate development impact/change (see below).

As mentioned above, key causal factors reflected in the reconstructed RRR Project ToC have shown important to bring about the expected institutional change processes. Some of these factors were related to the roles and responsibilities of central and local governmental authorities and the engagement of the private sector. These factors have been fundamental to catalyse a wider scaling of the KCCA sanitation model in the country. The Kampala Sanitation Improvement and Financing Strategy from 2020 has provided the framework for working more dedicated and coordinated with stakeholders in the sector. Roles and responsibilities are clearly defined in the Strategy which also enhances the accountability. The role of development partners is also clearly pointed out providing a good foundation for the coordination. For a more detailed assessment of the contribution claim, see Annex 3.

Development in key impact trajectories since 2020

Since evidence of development impact (changes in livelihood, food security, health and environmental indicators) that can be linked directly back to the RRR Project support is still limited and premature, the Ex-Post Evaluation is instead focusing on assessing progress in some key impact trajectories that link key outcomes to development impact (Figure 5): i) *Institutional capacities and collaboration/enabling environment*, *research partnerships (discussed in section 5.3)*; ii) *Public-private partnerships*; iii) *Scaling to other cities/towns*; iv) *Enhanced faecal sludge management*; and v) *financing*.

Finding 7. There is clear evidence that the emptier associations (TAOUEL and GAU) have continued to grow after 2020 in terms of memberships and that they are enforcing requirements towards their members. Stakeholder consultations indicated that the associations play an important role in ensuring that members comply with regulation on faecal sludge management and preventing illegal disposals.

One key assumption of the ToC (Figure 3) was that the two emptier associations have been able to influence the enabling environment for faecal sludge management. It was assumed that if they have sufficient capacity to influence the institutional framework and foster an enabling environment for public private partnerships (PPP), then barriers for businesses (both with regards to their formalisation and development) will be minimised. When KCCA is notified on any misconduct they collaborate with the associations to follow-up with members. Members' dependency on the associations' recommendation to acquire a KCCA registration clearly reflects the important role the associations are given to enforce regulations and also allows the associations to retrieve their recommendation for registration in case a member do not comply with regulation (this is further discussed under 5.3).

The GAU shared with the Ex-Post Evaluation how they continue to advocate for gulper companies to become formally registered and not operate without being members of the association. GAU recognises that informal businesses can have a negative impact on their sector and reputation, and they have managed to integrate informal businesses into the association and thereby complying to the association's regulation. While members with an environmental service permits from KCCA have decreased in numbers, it is noticed that

20 companies have applied for a registration with KCCA. It was however also indicated that the registration process recently has taken longer than usual which could indicate a weakening of the capacity within KCCA.

Stakeholders consulted indicated that even if the PPP has been maintained after the RRR Project was completed there is a continued need for sensitisation of new staff members in government agencies to understand the gulper functions. This also include staff in NEMA who are not approving gulper businesses for licensing since they are not capable of complying with environmental and public health regulations due to technology challenges.[27] According to researchers and KCCA staff members there is a lack of willingness to address the dilemma that their services are highly needed, not least in informal settlements, but they are unable to comply with formal regulations. This prevents the gulper businesses to establishing PPPs for example through service level agreements as these can only be achieved with licenced entities. [28]

Table 3. Progress on key indicators

Indicator	2020	2022[29]	2024	May 2025*
Cesspool trucks		140	163	168
Registered cesspool companies	15	30	39	
Cesspool companies with KCCA license				35
NEMA certificates of Cesspool companies	6[30]	8	6	0
Environmental service permits by KCCA (gulpers)		12	7	7 (20 submitted for approval)
Registered companies for gulpers		15	34	38
Wastewater treatment capacity	38,000 m^3/d		51,100 m^3/d	

Source: Evaluation Teams elaboration based on the Review of the Strategy implementation (2024),[31] research and the External Review of the RRR (2020) and interviews.

*Based on interviews

As reflected in Table 3, six cesspool companies managed to acquire NEMA licenses during the RRR project, but these have now expired and none of the members of the emptiers associations have acquired new licenses. During the project period, GIZ and implementing partners' convening of the stakeholders allowed for six companies to be licensed by NEMA which had increased to eight in 2022.[32] Consultations with the emptiers association revealed that without GIZ/partners' facilitation the licence process had become cumbersome and NEMA has shown reduced interest in supporting the association members renewing their license. This was however not confirmed by NEMA who indicated that the lack of renewal of licenses was likely due to incomplete applications.

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27 S. Singh; F. Laker, F.; N. L. Bateganya; A. G. Nkurunziza; S. Semiyaga; D. Brdjanovic (2022), *Evaluation of Business Models for Fecal Sludge Emptying and Transport in Informal Settlements of Kampala, Uganda,* Water 2022, 14, 2914.

28 S. Singh; F. Laker, F.; N. L. Bateganya; A. G. Nkurunziza; S. Semiyaga; D. Brdjanovic (2022), *Evaluation of Business Models for Fecal Sludge Emptying and Transport in Informal Settlements of Kampala, Uganda*, Water 2022, 14, 2914.

29 S. Singh; F. Laker, F.; N. L. Bateganya; A. G. Nkurunziza; S. Semiyaga; D. Brdjanovic (2022), *Evaluation of Business Models for Fecal Sludge Emptying and Transport in Informal Settlements of Kampala, Uganda*, Water 2022, 14, 2914.

30 ECOPSIS (2020), *External Review of the project "Safe Resources Recovery and Reuse" (RRR).*

31 E. K. Musabe (2024), *Review of the progress of implementation of the Kampala Sanitation Improvement and Financing Strategy (2020-2030),* vol. 2024.

32 S. Singh; F. Laker, F.; N. L. Bateganya; A. G. Nkurunziza; S. Semiyaga; D. Brdjanovic (2022), *Evaluation of Business Models for Fecal Sludge Emptying and Transport in Informal Settlements of Kampala, Uganda,* Water 2022, 14, 2914.

Finding 8. There is clear evidence of scaling/spill-over effects from Kampala to other cities/towns in Uganda, and especially Mukono municipality has replicated the Kampala model on developing sanitation by-law and a faecal sludge management strategy, implemented minimum standards and concrete reuse initiatives.

The Ex-Post Evaluation's consultations with stakeholders in four different municipalities and cities confirmed a strong spillover effect from the RRR Project in terms of benchmarking sanitation measures. Table 4 provides an overview of uptake of technologies and approaches in the different locations. Mukono municipality in particular (refer also Box 4) have implemented several initiatives based on learning from Kampala. Mukono is located nearby Kampala and many of the circumstances in this municipality are similar to Kampala. In Jinja, there was a high recognition of the need to enforce on-site sanitation standards since it is a great concern that pits cannot be emptied and pollute groundwater. However, costs and behaviour are key challenges. Emptiable latrines are not cheap, and many people are used to substandard latrines, where they spend less money in their construction.

Table 4. Uptake of learnings from KCCA in consulted cities/municipalities

Learning area	Mukono municipality	Mbarara city	Jinja city	Mbale city
Call centre	Implemented	Stalled		Planned
FSM strategy & by-law	Implemented		Drafted	Implemented
Minimum standards	Implemented		Learned	
Gulper technology		Implemented	Implemented	Implemented
Organisation of emptiers associations		Learned	Implemented	
Private sector/polluter pays	Implemented	Implemented	Implemented	
Recycling and resource recovery	Implemented	Learned	Learned	

Source: Evaluation teams' stakeholder consultations.

Several policy documents have been developed based on inspiration from KCCA learnings. Both Mukono municipality and Jinja city have taken up the idea of developing sanitation and faecal sludge by-laws. In Mukono, a Solid Waste Management Strategy and by-law and an FSM Strategy and by-law were both inspired by the KCCA sanitation framework. In Jinja, a draft by-law has twice reached the final stage before approval (Solicitor General's Office) but so far, no by-law has been adopted. Challenges with large staff turnover and a need to sensitise decisionmakers repeatedly keeps preventing the by-law being fully adopted. Also, in Mbale City a Solid Waste Management Plan has been developed but is awaiting final clearance at the Solicitor General's Office. Mbale City also developed a WASH Investment Plan, with support from WaterAid. Both documents were produced with inspiration from KCCA.

In Jinja city there was a learning from Kampala to organise private emptiers businesses in one association. The City Council therefore encouraged the businesses to join an association. The association was established in January 2024 and currently has 11 members. The association is coordinating with the City Council on behalf of all the members which has facilitated the communication for the Council. According to stakeholders, NSCW has trained a company in applying gulper technology as the city is also challenged by informal settlements where it is difficult to empty the pits. The Council has also adopted a stricter approach to enforcing waste management and recently they hired a full-time lawyer to follow up on illegal disposals (also inspired by KCCA's strict enforcement). This has apparently helped and according to NSWC more faecal sludge is now being deported at the plant.

Since the plant is not designed to manage faecal sludge it is deported to ponds where it is stored for eight years before being picked up by farmers or spread out at the plant (normally farmers only pick parts of it).

Finding 9. Together, the above-mentioned impact trajectories have contributed to enhancements in a number of key sanitation indicators related to faecal sludge since 2020, including those related to safely managed, collected and treated faecal sludge.

This enhanced framework and organisation of the sanitation sub-sector has increased the volumes of faecal sludge collected in Kampala, including within poor settlements. This has, on the one hand, resulted in improved health conditions (less waterborne diseases) in poor settlements while, on the other hand, the availability of faecal sludge for agricultural farmers (mainly) and energy has increased significantly in response to a high demand (from agriculture). There is also clear evidence of spillover effects from Kampala to other cities in Uganda as well as to other countries in Africa. It is highly unlikely that these changes would have happened without SDC's RRR Project support.

Table 5. Progress on key sanitation indicators (faecal sludge)

Indicator	2020	2024	Target 2030
Safely managed sanitation (estimated)	60%	70%	100%
Faecal sludge collection	911 m^3/d	1200 m^3/d	1500 m^3/d
Faecal sludge treatment	400 m^3/d	800 m^3/d	1600 m^3/d

Sources: Review of the Sanitation Strategy implementation (2024),[33] research and the External Review of the RRR project (2020)

[33] E. K. Musabe (2024), *Review of the progress of implementation of the Kampala Sanitation Improvement and Financing Strategy (2020-2030),* vol. 2024.

Box 4: Mukono Municipality

Mukono Municipality, a fast-growing urban centre within the Greater Kampala Metropolitan Area, has leveraged its proximity to Kampala to draw practical lessons for strengthening its sanitation and solid waste management systems. Mukono Municipality teams have conducted approximately five benchmarking visits to KCCA sites and programmes, spanning about two weeks of intensive peer learning. These visits included engagements with KCCA's partners such as Water for People through the Weyonje Campaign, and site visits to facilities like the Lubigi Faecal Sludge Treatment Plant (FSTP), the Black Soldier Fly plant at Bugoloobi, and school-based biogas installations.

Mukono Municipality has drawn several operational, policy, and financing lessons from KCCA, including:

- Mukono successfully adapted KCCA's community call centre model, establishing its own structure to improve community reporting and responsiveness.
- Despite not having its own FSTP initially, Mukono used insights from KCCA's plants at Bugoloobi and Lubigi to plan for its FSM operations. The Municipality has since secured 30 acres of land and designed an integrated FSTP with a capacity of 400 m³/day, co-located with a new solid waste management facility. Mukono learnt that FSTP generate large volumes of solid waste during FS screening stage. This can be managed from the nearby solid waste facility in the vicinity.
- The concept of outsourcing solid waste collection to private operators was directly borrowed from KCCA's model and is now in place, with clear service contracts and based on polluter-pays principles.
- Mukono developed Minimum Standards for Onsite Sanitation Facilities closely modelled on KCCA's, ensuring alignment with national and metropolitan requirements.
- Under the Global Green Growth Institute (GGGI) partnership, Mukono has developed a Solid Waste Management Strategy and by-law and a FSM Strategy and by-law (2023–2033) - both inspired by KCCA frameworks. KCCA's ability to mobilise external partners also guided Mukono in attracting GGGI as a key collaborator.
- Mukono's strengthened collaboration with KCCA enabled it to provide space for solid waste from Kampala during the Kiteezi landfill crisis, demonstrating regional solidarity and learning from KCCA's challenges.
- Based on learning from KCCA's solid waste management setbacks, Mukono established a new Material Recovery Facility focusing on plastics, compost, and the production of Refuse Derived Fuel (RDF) for use in steam boilers and the cement industry.

Finding 10. Financing remains a challenge for implementation of the sanitation strategy as well as for sustaining of progress.

A key concern for implementing the sanitation strategy has obviously been resource availability. The strategy estimated in 2020 that a total of USD 271.7 million would be required to finance the implementation of the strategy. The Strategy Review (2024) indicates that while all aspects of the sanitation chain have been addressed by the strategy in implementation, the planned tasks have been implemented to a varying degree due to shortcomings of prioritisation and budget. The Review also provides an updated estimate of the required revised financing to accomplish the objectives of the strategy for the period 2025-2030 to be USD 229.7 million.[34]

According to UNICEF's analysis of WASH investments in Uganda in 2023/2024, resources have significantly fallen short of the sector financing needs. Especially rural areas are lacking resources.[35] Kampala is better off although also short of investments. Government's budget to KCCA for sanitation increased until 2022/2023, but hereafter it decreased again (Figure 6).

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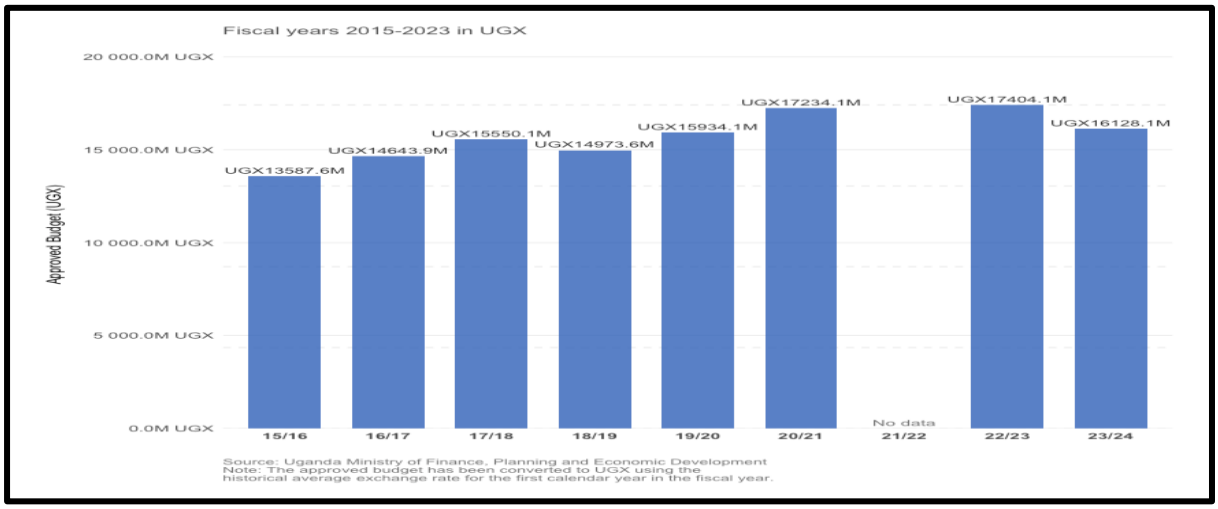
34 E. K. Musabe (2024), *Review of the progress of implementation of the Kampala Sanitation Improvement and Financing Strategy (2020-2030),* vol. 2024.

35 UNICEF (2023), Investing in water, sanitation, and hygiene | Financial year 2023/2024.

Figure 6. Government's allocation to KCCA for sanitation and environmental services from 2015 to 2024



Source: The Evaluation Team's calculation of data from the Ugandan Ministry of Finance, Planning and Economic Development

Finding 11. There are indications that impact trajectories linked to the Kampala Sanitation Improvement and Financing Strategy and the related framework are contributing to longer-term development impacts in terms of improvements in health, sanitation, and environment (e.g. waste collection) conditions. While there are also indications that food production may have increased due to enhanced use of faecal sludge for manure, there are some concerns that the current practice of applying faecal sludge in farming may have a negative impact on health and (longer-term) environmental issues.

As mentioned above, the amount of faecal sludge collected, transported and safely managed has increased steadily over the ex-post project period.

Based on the Ex-Post Evaluation's visit to some poor informal settlements in Kampala, this has resulted in reduced incidences of cholera and diarrhoea. In the case of Cholera, the settlements had not had any outbreaks since the RRR Project was completed. Previously, these outbreaks were quite frequent within the settlements. While it was acknowledged that this development cannot fully be attributed to the RRR Project since other sanitation campaigns has also been implemented over the period (including during COVID-19), it was the perception among the people consulted, that the influence from the campaigns to which the RRR Project had contributed was significant. Community members also emphasised that the environment had improved as the smell had been reduced. This had also inspired the settlements to introduce other environmentally friendly activities, such as more frequent cleaning of the area promoted for instance by the CWIS Programme.

In terms of *food security*, management and staff at the Lubigi Treatment Plant confirmed that the demand for faecal sludge from agricultural farmers was very high and still beyond the amount that were available at the plant site. Some of the farmers who come to pick up the sludge are living hundreds of kilometres outside Kampala and arrive with big trucks. Thus, there is a still unsaturated market demand from farmers for the faecal sludge. Currently, however, the Lubigi Treatment Plant is selling the dried sludge before it has been properly stored (as per the WHO guidelines). According to stakeholders consulted, farmers are willing to take the faecal sludge also before it is considered to be safe. Concerns have therefore been raised about potential health issues related to the faecal sludge the farmers are spreading out on their farms. The Makerere University (CEDAT) with partners from Sweden and United Kingdom investigated this potential risk in a research study which compared farms that used faecal sludge as fertiliser with farms that had not done so in recent time. The study

also assessed the potential risks for consumers of faecal sludge-fertilised vegetables.[36] The study concluded that farms which had not used faecal sludge in recent time were almost as contaminated with faecal organisms as farms that had actively applied the sludge (most likely due to animals in the fields). In general, the risk of contamination and prevalence of E. coli and Ascaris lumbricoides was high at both types of farms. The study found a higher concentration in leafy vegetables compared to cabbage. The prevalence of E. coli and Ascaris lumbricoides diminished with the time the sludge had dried, and it was suggested as a mitigation strategy to reduce the contamination. The study did not test the potential negative longer-term impact from faecal sludge, e.g. related to an increased number of heavy metals going into the groundwater. This is a concern that deserve further attention.

Alternative market opportunities for faecal sludge have been tested through the RRR Project (fuel briquettes). As discussed elsewhere in this report, this market has not really taken off (yet) and the demand for sludge for this purpose has not increased. It is however noted that an important achievement for Water for People was realised in 2022 when a new standard for reuse was approved that included faecal sludge as a resource that could be applied for other things than agriculture. In addition, research studies[37] show that also industries have an interest in the sludge (e.g. for bricks making) but that they require it in amounts that are not possible to deliver by the treatment plant.

5.3 Capacity strengthening and sustainability

EQ 3: To what extent have the outcomes achieved been sustained, scaled-up or replicated 3-6 years after project completion?

- Are the achieved project outcomes still present 3-6 years after conclusion of the project? If not, why not?

EQ4: How has the project contributed to strengthening of capacities and to what extent have these been sustained?

- Which capacities have been strengthened (individual, organisational level, enabling environment)?
- How have linkages (individual-organisational-enabling environment) evolved and how has the systemic level been influenced through these linkages?

EQ 6: What were the potentials for replicability in the same geographical context or elsewhere?

- Which specific elements or approaches are most feasible for wider replication and where?

As described in Chapter 2 (Approach and Methods), a systematic framework for assessing capacity development has been applied for this Ex-Post Evaluation. Figure 7 summarises key achievements on capacity strengthening at different levels realised both during the RRR Project implementation as well as ex-post. The following analysis takes its point of departure in the figure.

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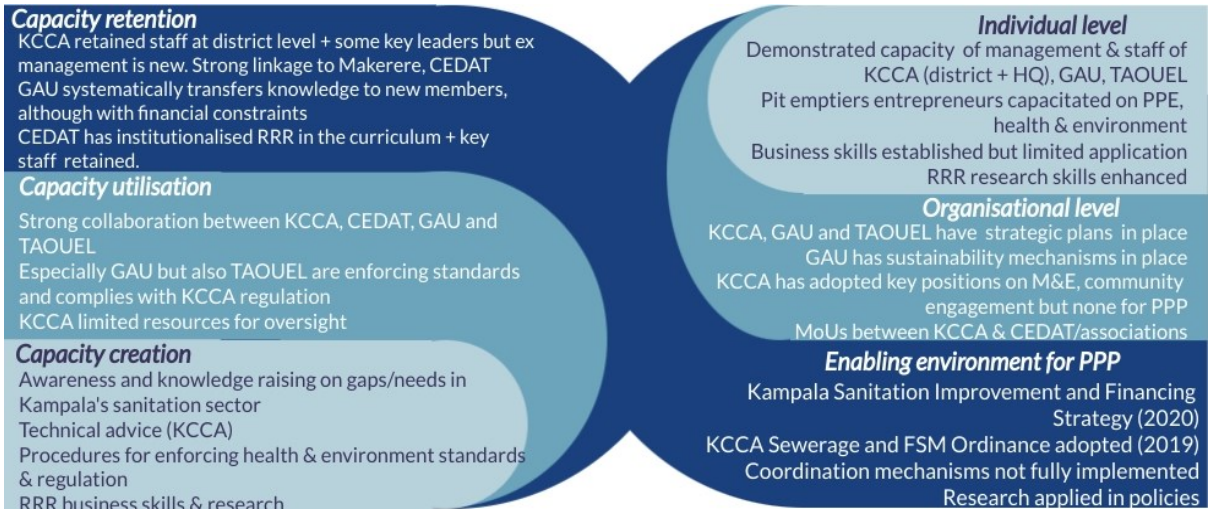
36 G. Butte; C. Niwagaba; and A. Nordin (2021), *Assessing the microbial risk of faecal sludge use in Ugandan agriculture by comparing field and theoretical model output*, Water Research 197, 2021.

37 Swaib Semiyaga, Mackay A.E. Okure, Charles B. Niwagaba, Alex Y. Katukiza, Frank Kansiime (2015), *Decentralized options for faecal sludge management in urban slum areas of Sub-Saharan Africa: A review of technologies, practices and end-uses*, Resources, Conservation and Recycling 104, page 109-119.

Figure 7. Achievements within capacity strengthening across different key stakeholders



Source: Evaluation team's development based on triangulation between interviews and document review.

Finding 12. There is limited indication that the RRR Project has managed to build capacity for sustainable businesses reusing faecal sludge. Only one company has continued producing briquettes using faecal sludge and several of the other companies have had to reduce their production and omitted the faecal sludge but still continued the briquettes making. This is in line with international experiences on building businesses on waste reuse.

Table 6 provides an overview of four companies consulted during the field visit to Kampala in May 2025. As reflected, only the Water for People initiated company has continued using faecal sludge in the production and all the others stopped this practice when the RRR Project ended and Water for People stopped providing the sludge for free. As mentioned above, Tokosa (refer also Box 5) was recently fully privatised and has had to restructure the company and trim their staffing structure in order to further commercialise the business.

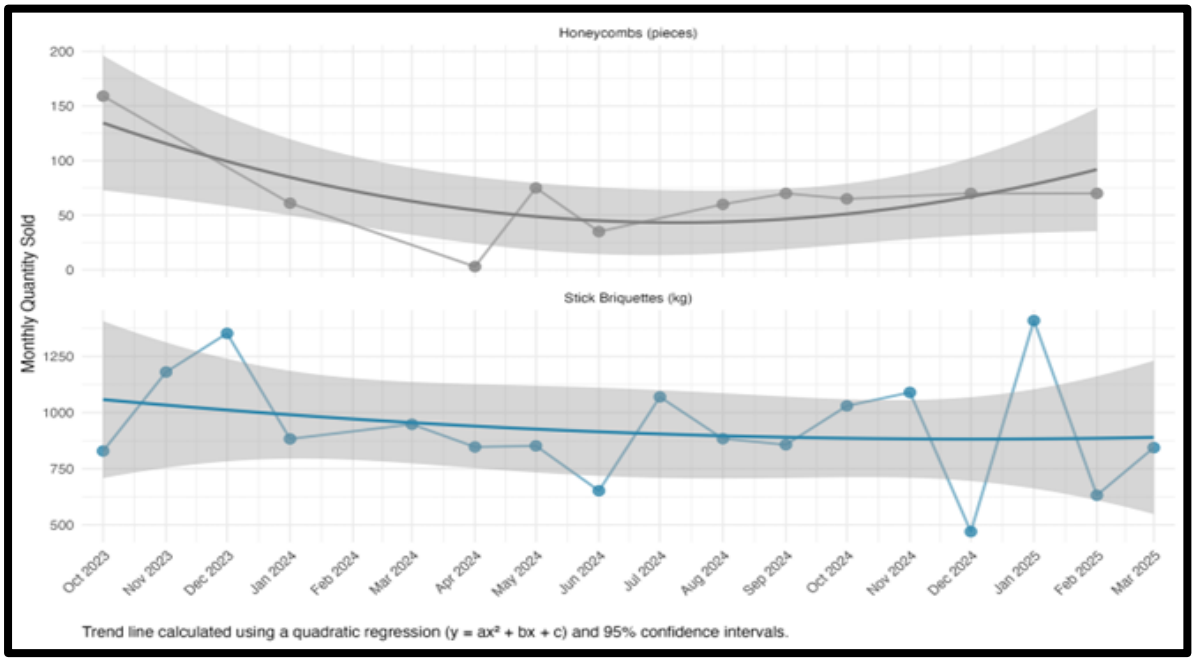
Table 6. Overview of companies consulted and their current status as reflected by interviews

Company name	Tokosa	SEACO	KEG	Best of waste
Use of faecal sludge	Yes	No	No	No
Employees 2020	6	6	10	6
Employees 2025	4 full time, 3 part time	2	8	6
Type of production	Stick and honeycomb briquettes	Honeycomb briquettes	Stick and honeycomb briquettes	
Production 2020 in average per week	1.5 tons briquettes	500 honeycomb briquettes	198 honeycomb briquettes	1 ton of briquettes
Production 2025 (per week)	250 kg*			2,5 tons
Land challenges		Yes	Yes	

** Based on sales numbers but according to interviews they produce on request.*

Figure 8 provides an overview of Tokosa's sales trends from October 2023 to March 2025. The primary product is stick briquettes while the secondary is honeycomb briquettes. Sale of stick briquettes and honeycombs has largely remained constant throughout the period, and in general it has not been possible to increase the sale. When it comes to the variation in monthly sales volume of stick briquettes, it ranges from 470kg to 1,410kg with an average monthly sale of 931kg.

Figure 8. Tokosa's sales development from October 2023 to March 2025.



Source: Data provided by Tokosa.

Neither of the companies have been able to increase their number of employees. Only Best of Waste has remained with the same number of employees and has also managed to increase its production with 150% from 2020 to 2025. Stakeholder consultations with academia, Swiss organisations and SDC staff all confirmed that the experiences with building businesses on waste reuse continues to be a challenge. Some of the initial research conducted by Makerere CEDAT and others[38] showed that even if the amount of waste continuous to increase, not least in informal settlements, it is very difficult to get access to good clean waste. Even if you can get access to it is required that you pay for it and there are a lot of procedures involved in getting access to it. Nevertheless, the studies also showed that reuse of waste has the potential to be profitable and even fund much needed investments in sanitation. So far this has however not been convincingly demonstrated in Kampala. It should however be noted that stakeholder consultations in two parishes of Kampala indicated that the reuse of waste is taking up in informal settlements and there are community-based organisations (CBOs) within this field. In one of the Parishes 17 CBOs were active with several of them reusing waste.

[38] Joel R. Kinobe, Charles B. Niwagaba, Girma Gebresenbet, Allan J. Komakech, and Björn Vinnerås (2015), *Mapping out the solid waste generation and collection models: The case of Kampala City, Journal of the Air & Waste Management Association*, 65:2, 197-205; Stefan Dienera, Swaib Semiyaga, Charles B. Niwagaba, Ashley Murray Muspratt, Jean Birane Gning, Mbaye Mbéguéré, Joseph Effah Ennin, Christian Zurbrugg and Linda Strand (2014*), A value proposition: Resource recovery from faecal sludge - Can it be the driver for improved sanitation?*

Box 5: Tokosa – Briquettes Company:

The company Tokosa was established by Water for People to demonstrate how faecal sludge could be reused for eco-briquettes. In 2018 a Memorandum of Understanding (MoU) was signed between Water for People and NWSC to provide sludge for briquettes production and to allow for the establishment of a production facility, a carbonizer and a sludge drying green house at the Lubigi Treatment Plant. The MoU with NSWC was extended in 2024 and the current agreement runs to 2028 to allow for continued production of briquettes at the treatment plant and access to faecal sludge. The company gets access to 6 million tons of faecal sludge a year. Tokosa was privatised in November 2023, and a prior employee of Water for People became the owner and managing director of the company. Water for People has continued providing some support to the company and the owner continues to report on monitoring data including on production, sales and company expenditures.

The company produces honeycombs and stick briquettes with a composition of 60% charcoal dust and 40% faecal sludge. **By 2020** when the project ended the company had produced more than 10 tons of briquettes and had sold more than 3 tons. The company produced 1,5 tons a week and had 6 staff members. The company targeted business to business market such as chicken farmers and middle-class consumers and wanted to reach a production of 5 tons a week. This was however not realised and maximum production was at 2-3 tons a week. According to stakeholder interviews the company **today (May 2025)** has the capacity to produce 3 tons a day but this capacity is not fully taken advantage of as the demand is still not at this level. In average, the company has sold about 1 ton a month from October 2023 to March 2025. They still use 40% of faecal sludge. The company has 7 employees of which 3 of them are casual labourers who are called upon during production. There are two sales agents established in two different locations in Kampala and customers can therefore access the briquettes in three different locations. Clients still include chicken breeders but also households and schools. So far, the company is investing all surplus in further building the company and the company is therefore not fully profitable yet.

Finding 13. At the individual level, several key staff and management have been capacitated and there are good indications of capacity retention of these resource persons in most of the public and private organisations. While individual capacity to drive and establish reuse businesses has been less evident in terms of business growth there are indications that individuals are able to apply their skills in other areas.

At the individual level, capacity has been created through awareness raising on needs and gaps in Kampala's sanitation sector. The strong reliance on on-site sanitation and very often pits that were not possible to empty, urged the need for developing the emptiers profession to also allow for innovating techniques to empty pits that were not accessible for cesspool trucks. This created the foundation for further equipping gulpers to reduce their own health risks and reduce the potential environmental pollution from unauthorized pit emptying. Entrepreneurs' capacity was created by introducing a number of training sessions and provide the technology for gulpers to perform their jobs more safely. Cesspool companies and gulpers were capacitated on PPE, hygiene requirements and how to conduct the emptying business and transportation in a safe manner. The Ex-Post Evaluation confirmed that several of these capacities are still in the sector utilising their capacities in various positions and scaling them to other entrepreneurs.

At the same time a number of stakeholder engagements were conducted with key staff members and management of the public authority to improve the attitude towards gulpers and enhance the collaboration between the key actors. The foundation for this work was evidence based and researchers at CEDAT were supported to provide evidence on the different elements of the sanitation sector and how it would be possible to reuse faecal sludge for productive use with the intention that potentials for generating income would ultimately lead to allocation of more funding to the sanitation sector. While individual entrepreneurs were capacitated to reuse faecal sludge in their briquettes, most of these businesses have discontinued reusing faecal sludge, as shown above.

While the evidence for building businesses at the organisational level is not convincing it could still be that individuals that benefitted from the RRR Project are still using these skills for other purposes. One training participant mentioned that he uses his skills acquired from

the business course to support CBOs/SMEs developing business plans as a consultant. He has also ventured into other waste businesses including in the sanitation area although that was not his initial business idea.

Finding 14. At the organisational level, the emptiers' associations have demonstrated integration of effective structures and procedures and that these are being implemented. It is however noted that the collaboration relies highly on self-discipline and KCCA is not capable of providing full oversight in case the associations do not follow their own regulations.

Both associations have been supported to further develop their associations. In 2021, GIZ and Water for People funded an institutionalisation process where strategic plans were developed and adopted. While the strategic plans for both TAOUEL and GAU are coming to an end in 2025 both organisations confirmed that they are capable of developing new plans on their own. According to management of TAOUEL, the RRR Project connected the association to KCCA, but the strategic plan was a further establishment of the association's collaboration with the government.

A key element of the associations' role is to enforce safety standards towards their members. This is reflected in the targets of the associations' strategic plans to ensure a professionalisation and that members appreciate health and safety standards and comply with legal obligations that govern faecal sludge management.[39] According to TAOUEL's management this is done in practice, and it happens that the police or KCCA captures trucks in misconduct and call the association to take measures towards the member. GAU also explained how they enforce compliance towards their members through an disciplinary committee (Box 6). While enforcement of the associations in practice is generally confirmed by external stakeholders, it is noted that KCCA lacks the capacity to fully oversee this enforcement. However, as mentioned above, the associations do have the mandate to withdraw their recommendations of a member's registration with KCCA so in principle they do have a considerable enforcement tool.

Box 6: GAU's enforcement of standards/regulation towards members:

The Disciplinary Committee typically meets every Saturday of the week, and reviews around four company cases per week. There is almost one case per business day. The most frequent issues include:

- Faecal spillages in environment during emptying or transportation
- Illegal dumping in other places other than assigned plant
- Personal Protective Equipment (PPE) noncompliance
- Operating without company branding
- Unauthorized use of another company's workers without notifying the director

The Committee is striving to be proactive and emphasises corrective action through accountability, rather than punitive exclusion. Nevertheless, penalties are escalated for repeated non-compliance, but errant members are supported to return to compliance. So far, no member has ever been expelled but the following actions have been taken: 3-month suspension or full cancellation of membership if a member commits the same offence more than 3 times. Members who repeat violations may continue working, but their continuation depends on the discretion of the Executive Board. Members with fewer than three offences are never expelled outright. The Committee instead offers structured guidance.

Cases have increased due to a growing number of members joining the association, and more subcontracted workers are with limited training. Fewer refresher trainings organised due to financial constraints.

[39] https://apaapasa.org/sites/default/files/2022-06/TAOUEL_SP_2022-2026.pdf

As mentioned above, both organisations have grown in terms of memberships (Table 3); GAU has doubled its membership since 2020 and TAOUEL has increased its numbers of trucks with 20% from 2022 to 2025. According to GAU quite a number of gulpers have broken out of existing companies and started on their own, thereby further developing the sector. GAU runs the fixed transfer station at Lubigi Treatment Plant which generates some income for the association. GAU also runs a revolving fund mechanism (implemented by Water for People after the RRR Project was finalised) where members can take up loans and pay back with interests. This allows members to access credit and further expand their businesses while the association generates an income on interests (5% monthly interest rate). A similar set-up was attempted with TAOUEL, but they were not considered fully capable of managing such a fund. While it is likely that this financial model can sustain GAU, it is less convincing how the financial sustainability of TAOUEL is ensured.

The associations are responsible for training new members to comply with regulations, and they are in charge of retaining the capacity building of members. The entrance fee to access GAU covers the initial training to ensure members are capable of complying with regulations. Besides that, GAU also shared how they have been engaged to spread the technology to other cities, through the CWIS Programme. They have so far conducted the training in seven cities. However as reflected by Box 6, sustaining the training modules have become more challenging after the end of the CWIS.

Both GAU and TAOUEL are engaged in the Pan-African Association of Sanitation Actors (PASA) which was initiated in 2019 and was registered in 2021 in Dakar, Senegal. PASA is an umbrella body of national associations of non-sewered sanitation actors in Africa. PASA is a not-for-profit, non-political network of peers whose mandate is to strengthen and develop the sanitation value chain on the African continent. PASA was initiated by the BMGF who funded African sanitation actors to join forces. The President of TAOUEL is also General Secretary of the PASA and have been a leading force in establishing the association. Substantial knowledge sharing is conducted at these meetings and an important forum for benchmarking. It is however unknown to what extent the association will be sustained without donor funding.

Finding 15. Besides KCCA as a coordinating public authority to convene other relevant stakeholders, the RRR Project focused less on strengthening the capacity of public sector authorities. However, project achievements paved the way for BMGF to fully invest in KCCA's capacity strengthening. Important progress has since been achieved in this area including on M&E and community engagement, but a private sector engagement staff member is no longer prioritised.

During the RRR Project the political attitude and willingness to promote the sanitation agenda was very high. The executive management of KCCA at the time strongly promoted the sanitation agenda and there were discussions on whether the sanitation area could advance to a "sanitation utility" in a similar set-up as with the NSWC. This was however not realised. The recently hired KCCA management has also indicated a strong political engagement in the agenda which is key in maintaining achievements in this area and the future sustainability. It is however noted that there has been a high staff turnover during the last couple of years which is likely to influence the capacity.

As part of establishing the call centre, the RRR Project supported the Weyonje App. This system laid the foundation for the current KCCA sanitation data management dashboard that integrates sanitation information, which was first introduced through the RRR Project and has later on been reactivated as part of the BGMF's CWIS Programme.[40] The dashboard provides

[40] E. K. Musabe, E. K., *Review of the progress of implementation of the Kampala Sanitation Improvement and Financing Strategy (2020-2030)*, vol. 2024.

real time data on key sanitation indicators and thus allows for tracking progress. While the App had struggled with uptake and had for some time been down due to data ownership issues in the transfer from the CWIS Programme to KCCA,[41] the Weyonje app was up and running when the field visit was conducted in May 2025. According to stakeholder consultations, this is an important achievement that will make it possible to keep politicians updated on the development. This system may also help introducing KPI sanitation indicators for KCCA management. These indicators have until now been based on more broadly defined sanitation indicators.

The call centre was scaled to first act as an emergency hotline for ambulance services in Kampala but also for other areas during COVID-19. This further spurred development of the call centre being scaled to cover all public services in Kampala and today it is no longer only a hotline for pit emptiers and clients but rather a hotline for all public services. While this has reduced the use of it for pit emptying services it serves a broader scope for citizens who needs services.

Another key learning from the RRR Project that was further scaled in the CWIS Programme was the community engagement and behaviour change campaigns. Lessons learned from piloting in a few wards on how to engage local community leaders like Local Councils and in enforcing regulation and promoting behaviour change were taken up in the CWIS and further implemented to all wards in Kampala. The Weyonje campaign promoted the slogan referring to improved pits “use it, built it, empty it” as well as enhanced hygiene (handwashing) and reduce solid waste in pits. According to two Local Councils from two different parishes in Kampala, challenges are still there, and the population growth is putting great pressure on the latrines in the wards. In one parish, the Local Council explained that while the population had doubled since 2015, only few more toilets have been built in this period (5-10 in this specific parish). The behaviour change campaigns have enhanced handwashing practices and reduced diseases like cholera and diarrhoea but massive sanitation challenges prevail, and the pits are being much quicker filled up. Where it used to take 2-3 years the pits are now filled within three months. In the informal settlements, it is still a severe challenge to get the pits emptied due to lack of funds which makes it difficult to use the private emptiers. It was also noted, that CWIS/KCCA provided a subsidy for emptying the pits but after the phasing out of the project the prices have increased. This was also confirmed by other stakeholders including GAU who foresee a challenge in getting pits emptied in poorer communities. With the end of the CWIS Programme and the subsidised emptying there is a risk that the poorer segments will suffer from this development. This challenge is however being discussed between emptiers and KCCA and there are intentions to create incentives for gulpers to empty pits in poorer segments.

Enforcement of regulation towards littering has assumingly been enhanced to reduce waste in the communities and KCCA is regularly promoting clean up days that engages the communities. Local Councillors did indicate that there are community-based organisations who reuse the solid waste for income generating activities, but this was not further confirmed. KCCA also sometimes bring cesspool trucks to empty accessible pits.

District staff focused on public private partnerships; community engagement and M&E and staff were hired for these positions as part of the CWIS Programme. While the CWIS Programme ended in 2023 the staff continues to work as part of the district teams and here most staff members have been retained. While these positions proved useful during the CWIS Programme, it is noted that the private sector officers are not being continued after project end. Community engagement and M&E officers have been continued with KCCA but not the PPP responsible which is considered a key concern for the sustainability of the PPP engagement moving forward. The challenge relies with reduced resources to maintain the

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41 E. K. Musabe (2024), *Review of the progress of implementation of the Kampala Sanitation Improvement and Financing Strategy (2020-2030),* vol. 2024.

staff members for PPP at both district level but also at the KCCA headquarter level and in this prioritisation, it seems that the private sector officer position will not be continued.

Finding 16. When it comes to the enabling environment, considerable achievements have been realised building the PPP which is captured in the Ordinance and the Sanitation and Investment Strategy. While the KWSF was an important coordinating mechanism that allowed for important results during the RRR Project, the Forum has after COVID-19 not been able to resume its same level of importance and coordination mechanisms have not been prioritised to the same extent.

The Kampala Sanitation Improvement and Financing Strategy from 2020 marked GIZ' phase out of urban sanitation and end of support to KCCA staff coordinating the KWSF. According to stakeholder consultations, KWSF picked up during the years 2018 to 2019 resulting in the adoption of the ordinance and the strategy. KCCA steered the KWSF throughout the RRR Project but when the Strategy was adopted and the COVID-19 pandemic hit the country and physical meetings were no longer possible the role of KWSF diminished. The BMGF CWIS Programme Kampala took over the support to KWSF when GIZ phased out. Nevertheless, it so far has not returned to its previous level. Actually, only two meetings have been conducted after the pandemic. In general, the coordination mechanism for the sector been limited during the strategy implementation. According to the Review from 2024, coordination has not been performing well. It was found that the proposed coordination mechanisms at both district and greater municipality level had not been implemented.[42]

Finding 17. The RRR agenda was institutionalised in the curriculum of Makerere University CEDAT's Master of Science in Civil engineering (Environmental Engineering Option) and an MSc degree in Sanitation has been introduced (starting in August 2025). There is strong evidence of the University's influence on policy in Kampala, elsewhere in Uganda and Sub-Saharan Africa.

As discussed above, a strong linkage between academia and policy development has been established and is being continued after the RRR Project ended. A long and strong research collaboration between CEDAT and Swiss technical institutions has made an important complement to the RRR Project support. These relationships were already established prior to the RRR Project but the research collaboration as part of the project has indeed strengthened this collaboration. This way, a number of important achievements have been realised in terms of institutionalising the RRR agenda nationally and building an enabling environment not only in Uganda but also in Sub-Saharan Africa through research collaboration:

1. The RRR agenda has been further institutionalised as part of the revision of the curriculum in the Master of Science in Civil Engineering. The course is an almost complete replication of the RRR Project concept and strives to have course participants being capable of: i) Identifying business opportunities for resource recovery and reuse across the waste and sanitation sectors; ii) Developing business plans for a RRR business model; iii) Studying the feasibility of RRR business models by analysing legal, institutional, technological, logistical, health and financial aspects and related risks; iv) Defining strategic positioning, financing and action plans for the implementation of RRR business models; v) Being aware of success factors and building blocks for the implementation of financially viable RRR approaches; and iv) Understanding the relevance of business considerations and aspects for the successful implementation of RRR solutions on the basis of existing business models.

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42 E. K. Musabe (2024), *Review of the progress of implementation of the Kampala Sanitation Improvement and Financing Strategy (2020-2030),* vol. 2024.

2. A new Master on Sanitation and Wastewater is being introduced at Makerere University CEDAT in August 2025 and here the materials developed as part of the RRR Project will also be applied. This Master is different from what CEDAT is normally offering since it is opening up for a multi-disciplinary approach that allows non-engineers to apply. While it initially created some discussions within CEDAT to open up for non-engineers, the interest has been high. The experiences with the new Master will be evaluated in five years.

3. From 2019 to 2024, KCCA has worked on Collaborative Research with CEDAT to establish and share scalable models and technologies for enhancing Citywide Inclusive Sanitation (CWIS) Services. This has culminated into 20 BSc, 5 MSc and 1 PhD students having their research in topics towards finding solutions to sanitation-related challenges in Kampala City.

4. Makerere University CEDAT, together with KCCA, has been much involved in knowledge sharing across cities in Sub-Saharan cities, initially as part of the RRR Project, but more recently as part of the CWIS Programme. Stakeholder consultations refereed to knowledge exchanges in numerous Sub-Saharan countries like Zambia, South Africa, Mali, Senegal, Tanzania, Rwanda, Kenya etc. As part of the CWIS Programme KCCA, CEDAT, GAU and TAOUEL have visited a new country/city every six months to share experiences. This has fostered their collaboration internally but also the learning sharing from and with other countries.

Finding 18. A similar institutionalisation of the RRR Project concept has not taken place at the Makerere University Business School (MUBS). Despite development of a curriculum and courses on RRR, these were never adopted by MUBS.

While CEDAT has come a long way in terms of institutionalising the resource reuse agenda, the same has not applied to MUBS. Stakeholder interviews indicated that there had been high interest in the reuse agenda within the institution during project implementation. However, after the project was finalised and no funding was offered for travels, the knowledge sharing has been modest. Professors at the MUBS were frequently invited to share their experiences with resource reuse businesses development, but the close down due to COVID-19 restricted travels and reduced the opportunities to share learnings from the project. A lack of ownership to the project was apparent in the Ex-Post Evaluation's consultations with MUBS. While a full short-term course was developed concerning resource reuse, the course was never implemented. The reason provided was a staff turnover from GIZ' side that limited the follow-up from their side. Similarly, it was noted that while a curriculum concerning resource reuse was developed during the project period this was never adopted by MUBS. Thus, when the project ended the MUBS seem to have lost interest in the subject.

6 Conclusions and Lessons Learned

6.1 Conclusions

Conclusion 1: While the effectiveness of the institutional part of the RRR Project was assessed to be high at the time of project completion, the resource reuse business component was considered less effective. The adoption of the KCCA Sewerage and FSM Ordinance (2019) and the development of the Kampala Sanitation Improvement and Financing Strategy (2020), including related standards and guidelines, was considered fundamental to guide city-wide planning and investment towards achieving equitable and universal access to improved sanitation and hygiene and safe management of faecal sludge along the entire sanitation chain in Kampala. The establishment and operation of a call centre to provide the link between clients (demand) and companies (suppliers) of emptying services, and associations for both emptiers (TAOUEL) and gulpers (GAU) to work through MoUs with KCCA constituted other important institutional results. The achievement of these key results was largely a result of KCCA taking ownership of the process, and a close collaboration with different externally funded programmes and research institutions. On the business side, the experience with five supported pilot RRR businesses (on production of faecal sludge fuel briquettes) was still rather premature at the time of project completion. The business concept, however, was found useful for replication, although various obstacles were found for a deeper integration of RRR into sanitation. Overall, the RRR Project demonstrated a good example of adaptive programming, as it managed to redirect an initial main project focus on RRR business development towards a larger focus on critical institutional aspects and establishment of PPPs (as a pre-condition for RRR business development). It was also innovative in its piloting and testing of key technologies that allowed for further scaling and knowledge sharing with other cities and countries across Sub-Saharan African countries.

Conclusion 2: The continued relevance and coherence of the key RRR Project results is in particular confirmed by an enhanced institutional focus on sanitation aspects within KCCA and a continued commitment from key sector partners to implement the Kampala Sanitation Improvement and Financing Strategy. Work is ongoing within KCCA to develop specific management KPIs on sanitation as well as a dashboard (linked to the Weyonje app) to present real-time sanitation data. At the national level, “potentials for reuse” has now been included as a judgement criterion in feasibility studies for establishment of new treatment plants in the country, aligning well with the RRR Project approach. Likewise, in the recent revision of the Public Health Act, KCCA took part and managed to get a section on faecal sludge management included. Both GIZ and BMGF have continued to support implementation and dissemination of concepts and approaches from the RRR Project, both within and outside Kampala. The established call centre within KCCA became of great importance during the COVID-19 pandemic, where it served as a centre for emergency functions nationally. Afterwards, the centre has maintained a broader scope and relevance within KCCA than only related to sanitation services. In business, Water for People is still supporting opportunities for business development on briquetting from faecal sludge, although it has been a challenge to make it a viable business. At the same time, there is a huge demand for the increasing amount of faecal sludge that is now collected in Kampala from agriculture and all produce is being collected from the treatment plant.

Conclusion 3: There is evidence that key outcomes, achieved with significant contribution from the RRR Project support in Kampala, have been sustained, scaled-up and replicated after project completion. Within KCCA, the continued institutional support (through BMGF) has contributed to a sustaining of key approaches and concepts introduced during the RRR Project, and KCCA is now to a certain extent capable of managing most of these functions. The five KCCA divisions now all have got staff assigned to support implementation and monitor sanitation initiatives. In the wider Ugandan context, other municipalities/cities have now started to benchmark and replicate from KCCA (e.g. Mukono and Jinja). At regional level, a number of countries in both West Africa and Sub-Saharan Africa

are showing large interest in KCCA's sanitation model and have started to take up elements of it. Different mechanisms have allowed for this replication of the KCCA sanitation model, including city-to-city peer learning initiatives (BMGF) and research collaboration. SDC's support has here served as an important catalyst for further support and funding through its holistic approach, linking research with policy development/uptake and business opportunities, as well as by selecting implementing partners with strong complementary engagements.

Conclusion 4: While the RRR Project, together with other external programmes, has contributed positively to developing of capacities at different levels, the sustaining of the developed capacities shows mixed results, depending largely on the institutional commitment and timing of the training provided. At the KCCA institutional level, the RRR Project complemented more targeted institutional support from other larger programmes (mainly GIZ and BMGF). This contributed to an enhanced awareness and attention to sanitation aspects within KCCA, culminating with development and implementation of the KCCA Ordinance and Kampala Sanitation Improvement and Financing Strategy. As the institutional support from BMGF to KCCA is now also phasing out, KCCA are facing some challenges in their capacity to manage and coordinate strategy implementation. At the research level, the RRR Project has contributed to a strengthening of capacities at the Makerere University, now reflected in the revised curriculum from 2021 and a master on sanitation and wastewater introduced in 2025 within CEDAT. The sustaining of capacities has been stronger within CEDAT where researchers were already heavily engaged in this area of research and linked up with Swiss partner institutions. At MUBS, it has been more difficult to sustain capacities, due to an unclear ownership to the project and weaker institutionalisation. The training and support provided to TAOUEL and GAU and to their members has been fundamental for individual skills development in ensuring PPE and complying with regulation; and for the organisational development of these associations to establish stronger organisations with a larger membership base, a more solid financial stability (GAU), and to enforce compliance with regulations towards their members to operate at the standards defined by KCCA. The training and support provided to RRR business have not yet led to significant RRR business development. RRR is still seen as a difficult business concept in Uganda with limited support and incentives provided, but stakeholders also widely recognise the potential and need of such businesses. Initiatives to further enhance the agenda has been taken (feasibility studies, standards for faecal sludge briquettes).

Conclusion 5: Different longer-term development impacts are emerging after completion of the RRR Project with indicative positive effects on health, sanitation and the environment, but attention is needed to population growth and pricing. The longer-term impact on food security is more ambiguous. In general, the key messages around emptying pit latrines, faecal sludge management and improved hygiene and environmental protection has been taken up by informal settlements in Kampala where indications are that it has had an impact in terms of a reduction in waterborne diseases, reportedly lower incidence of cholera and diarrhoea, and a cleaner environment. The population growth in Kampala is however putting the sanitation conditions under further pressure and is a challenge that will need to be handled by KCCA. In addition, the phasing out of the CWIS Programme and the subsidised pit emptying has increased the prices for emptying which is likely to become a challenge for poorer settlements. Finally, while faecal sludge may increase agricultural production there are some concerns related to potential negative impact on health and the environment when farmers use the sludge before it has been properly stored (WHO guidelines). So far, research on this subject matter has been inconclusive and there may be need for further attention to this matter.

Conclusion 6: The potentials for replicability of the Kampala sanitation model are already very well demonstrated by recent uptake in other larger Ugandan cities as well as from a large interest from other countries in Africa. In particular, the sanitation strategy with its guidelines and standards, as well as the way to organise faecal sludge management within the city has gained traction elsewhere. A successful collaboration between the RRR

Project and other programmes and research initiatives with a broader (regional) geographic scope has been a main driver in this process. Differences in sizes and administrative capacities of cities have constituted main barriers to replication, in particular within Uganda. In a forward-looking perspective, within Uganda the reuse potential of faecal sludge for energy may become further strengthened if further restrictions become implemented on charcoal burning. Also, within the industry (bricks making) studies have shown a potential high interest if sufficient quantities of faecal sludge can be delivered.

6.2 Lessons learned

Based on the Ex-Post Evaluation findings and conclusions, the following lessons learned are derived.

Strategic and institutional lessons:

1. **The RRR project has demonstrated how adaptive management and flexibility to learn and innovate according to the context is crucial for achievement of results.** Shifting focus mid-project from RRR business development to institutional strengthening and PPPs was essential. Flexibility in implementation allowed alignment with ground realities and emerging opportunities. Piloting through research collaboration proved a solid foundation for innovation. While the reuse business development still hasn't fully taken off, the incorporation of reuse in university curriculum and new legislation has laid the foundation for further exploring options for waste reuse business development in the future.
2. **Local leadership and building on existing structures is essential for institutional ownership.**
   KCCA's willingness and ability to lead - despite being relatively newly established at the RRR project's inception - proved decisive in achieving systemic change. The already established partnership between Swiss research institutions and Makerere CEDAT was a strong point of departure for further cementing the partnership and institutionalising new learning within CEDAT. A similar ownership was not evident with the MUBS who was a new partner brought onboard. While MUBS considered the business development aspect highly relevant, it has not been sustained beyond the project period.
3. **A strong research-policy nexus can be an important driver for change.** Close collaboration between institutions like Makerere University (CEDAT) and KCCA enabled evidence-based policymaking and fostered credibility and uptake across stakeholder groups. The relationship has continued beyond the project period and today KCCA staff members are still engaged in PhDs at the CEDAT. This is likely to continue fostering the collaboration and the evidence-based policy-making.

Public-private partnership and capacity strengthening:

4. **Public private partnerships can be fostered if there is political willingness and sufficient incentives for private sector actors.**
   The call centre established through the RRR project support provided the linkage between demand and supply, connecting citizens who needed services and private sector actors who needed a market. The call centre increased demand visibility, lowered consumer prices, and encouraged formalisation of private sector actors.
5. **Associations can self-regulate with the right incentives and capacities.** TAOUEL and GAU play a vital role in enforcing standards among members, showing that local associations - when capacitated - can maintain sectoral discipline.

6. **Continued back-up from external partners may be required for some time to avoid that bureaucratic complexity stall progress in public-private partnership arrangements.**
   The inability of TAOUEL companies to renew NEMA licenses post-project shows how bureaucratic complexity can stall progress when there is no longer an intermediary facilitation.

Business and reuse:

7. **While there is concensus (e.g. feasibility studies) that resource reuse has potential for businesses development, there is still a need for demonstrating good business cases. Reuse of faecal sludge further complicates efforts due to potential safety issues and cultural perceptions.**
   Despite technical viability and adopted standards (beyond agriculture), businesses struggled due to stigma, low demand, and supply chain constraints (e.g. sludge access, drying space). While training improved entrepreneurial skills, lack of financing, and consistent supply hindered commercial uptake.
8. **Transparency requirements can provide dilemmas in marketing.**
   Some businesses chose not to disclose faecal sludge content in briquettes, highlighting reputational risks and the need for consumer awareness campaigns.

Sustainability and replicability:

9. **Peer exchange can foster spillover effects.**
   Benchmarking visits (e.g. from Mukono and Jinja) proved highly effective in scaling lessons from Kampala. Peer-to-peer learning appears to accelerate uptake. This has also allowed for wider branding and acknowledgement of KCCA outside of Uganda.
10. **Use of subsidies as an approach for reaching the poor requires a well-planned exit strategy.**
    Use of subsidies can be a useful approach to reach poorer segments of the population, but the phase-out needs to be carefully considered. When pit emptying subsidies ended post-CWIS, prices rose. Targeted subsidies may however be necessary for equitable access in low-income communities.

Annex 1: Evaluation Matrix

Evaluation Questions/Sub-questions	OECD DAC Criteria	Data collection		Analytical methods	Judgement criteria
		Data Source(s)	Method(s) of collection		
EQ 1: What were the main achievements (outcomes) at the time of project completion?					
What were the main outcomes achieved at the time of project completion?	Effectiveness	• End-of-project evaluation	• Document review • Key Informant Interviews (KIIs)	• Contribution analysis combined with process tracing	Actual vs. expected achievements
What were the main internal and external factors contributing / hindering achievement of the project objectives?	Effectiveness	• End-of-project evaluation	• Document review • Key Informant Interviews (KIIs)	• Contribution analysis combined with process tracing	ToC verification
In case any project outcomes were not achieved at the time of completion, have these outcomes been achieved ex-post?	Effectiveness	• End-of-project evaluations (2015, 2020) • Review of Implementation of Strategy (2024) • External studies and data sources	• Document review • Key Informant Interviews (KIIs) • Site observations	• Contribution analysis combined with process tracing	ToC verification
Have any unintended results emerged due to the project support?	Effectiveness	• End-of-project evaluations (2015, 2020) • Review of Implementation of	• Document review • Key Informant Interviews (KIIs) • Site observations	• Contribution analysis combined with process tracing	ToC verification

		Strategy (2024) • External studies and data sources			
EQ 2: To what extent are the project outcomes still relevant and aligned with similar/related interventions?					
How well do the achieved outcomes align with local level priorities (i.e. official priorities) and interventions?	Coherence, Relevance	• Sub-national / local priorities, policies & frameworks	• Key Informant Interviews (KIIs) with national/ subnational stakeholders	• Content analysis of documents • Thematic patterns analysis of KIIs/FGDs	Extent to which local level outcomes have been institutionalised
How well do the achieved outcomes align with national policy frameworks and priorities?	Coherence, Relevance	• National priorities, policies & frameworks	• Key Informant Interviews (KIIs) with national/ subnational stakeholders	• Content analysis of documents • Thematic patterns analysis of KIIs/FGDs	Extent to which national policy frameworks and priorities reflect project outcomes
To what extent have the supported interventions been compatible with interventions of other actors in the same geographic/thematic context?	Coherence	• Primary and secondary documents • SDC staff and partners (GIZ, Makerere University, Water for People, government authorities) • Other development actors • Open-source data	• Document review • Key Informant Interviews (KIIs) • Focus Group Discussions (FGDs). • Online information gathering.	• Content analysis of documents • Thematic patterns analysis of KIIs/FGDs	Extent to which other interventions have been identified and linked to the SDC project (coordination, complementarity, non-duplication and continuation)

EQ 3: To what extent have the outcomes achieved been sustained, scaled-up or replicated 3-6 years after project completion?					
Are the achieved project outcomes still present 3-6 years after conclusion of the project? If not, why not?	Sustainability	• Primary and secondary documents (e.g. Review of Implementation of Strategy (2024) • SDC staff and partners (GIZ, Makerere University, Water for People, government authorities) • Other development actors • Open-source data	• Document review • Key Informant Interviews (KIIs) • Focus Group Discussions (FGDs) • Online information gathering	• Content analysis of documents • Thematic patterns analysis of KIIs/FGDs • Contribution analysis combined with process tracing	• Development or maintenance of results in outcome areas since project completion
Are the approaches, plans and tools developed still utilised by project partners and beneficiaries and if so, what factors enable or hinder their continuous application?	Sustainability				• Level of uptake of approaches and tools across formal institutions (laws, policies, regulations) and informal institutions (social norms, customs, behaviour, capacities)
To what extent have project outcomes been scaled up at the systemic level?	Sustainability				• Examples of scaling outside intervention area (e.g. from local to national level)
What strategies or factors have facilitated or hindered the scaling process?	Sustainability				• Level of importance of internal and external factors
EQ4: How has the project contributed to strengthening of capacities and to what extent have these been sustained?					
Which capacities have been strengthened (individual, organisational level, enabling environment)?	Effectiveness	• End-of-project evaluation • EPROR	• Document review • Key Informant Interviews (KIIs)	• Contribution analysis • Process tracing	• Individual skills development • Enhanced delivery of outputs (e.g.

					service delivery) • Policy and legal framework
Do actors continue providing training to beneficiaries, and if so, how and which actors?	Sustainability	• Primary and secondary documents • SDC staff and partners (GIZ, Makerere University, Water for People, government authorities) • Other development actors • Open-source data	• Document review • Key Informant Interviews (KIIs) • Focus Group Discussions (FGDs). • Site observations	• Content analysis of documents • Thematic patterns analysis of KIIs/FGDs	• Invitations for training • Training programmes
What aspects, if any, of the training approach have sustained incentives and facilitated ongoing capacity building?	Sustainability				• Extent to which some elements of the training show more traction than others
How have linkages (individual-organisational-enabling environment) evolved and how has the systemic level been influenced through these linkages?	Sustainability				• Systemic changes due to capacity building
EQ 5: Which impacts have been achieved after project conclusion?					
To what extent have the expected impacts from the project support materialised in the period after project completion?	Impact	• Primary and secondary documents • SDC staff and partners (GIZ, Makerere University, Water for People, government authorities) • Other development actors • Open-source data	• Document review • Key Informant Interviews (KIIs) • Focus Group Discussions (FGDs). • Site observations	• Process tracing and data analysis	Trends/development in (expected) impact indicators

What has been the project's contribution to achievement of these impacts?	Impact	• Primary and secondary documents • SDC staff and partners (GIZ, Makerere University, Water for People, government authorities), thematic experts, Swiss organisations • Open-source data	• Document review • Key Informant Interviews (KIIs) • Focus Group Discussions (FGDs). • Data collection	• Contribution analysis combined with Process tracing	The relative significance of the project contribution pathways to achievement of higher-level outcomes/impact
Has SDC's support served as a catalyst for further support / funding? If yes, how?	Impact	• Primary and secondary documents • SDC staff and partners (GIZ, Makerere University, Water for People, government authorities), thematic experts, Swiss organisations • Other development actors	• Document review • Key Informant Interviews (KIIs) • Focus Group Discussions (FGDs)	• Contribution analysis combined with Process tracing	Level/examples of continuation/uptake by other development partners/government
Have any unintended positive or negative impacts emerged after project completion as a consequence of the project?	Impact	• Primary and secondary documents • SDC staff, partners, and external thematic experts • Open-source data	• Document review • Key Informant Interviews (KIIs) • Focus Group Discussions (FGDs). • Site observations	• Contribution analysis combined with Process tracing	Trends/development in impact indicators, that could be linked to the project support

EQ 6: What were the potentials for replicability in the same geographical context or elsewhere?					
Which specific elements or approaches are most feasible for wider replication and where?	Lessons learned	• Primary and secondary documents • SDC staff and partners (GIZ, Makerere University, Water for People, government authorities), thematic experts, Swiss organisations • Open-source data • Research and other external data sources	• Document review • Key Informant Interviews (KIIs) • Focus Group Discussions (FGDs). • Online information gathering	• Content analysis of documents • Thematic patterns analysis of KIIs/FGDs • Process tracing	• Level of learning/knowledge sharing
What barriers for wider replication have been identified?	Lessons learned				
Were there any missed opportunities that could inform future interventions?	Lessons learned				
Did the project incorporate adaptive learning during implementation?	Lessons learned	• Primary and secondary documents • SDC staff and partners (GIZ, Makerere University, Water for People, government authorities), thematic experts, Swiss organisations	• Document review • Key Informant Interviews (KIIs)	• Assessment of change patterns	Extent to which the project ToC and the intervention logic was revisited during implementation, including from phase 1 to phase 2

Annex 2: Detailed Approach and Methodology

While the strong focus in the ToR on assessment of the *contribution* from SDC's support calls for use of a *Contribution Analysis (CA)* approach, more recent research and studies argue for the advantages of combining CA with other more qualitatively oriented approaches such as *Process Tracing (PT)* when evaluating development interventions' contribution to impact.[43]

CA was originally developed as an approach for addressing *causality*[44], producing *credible claims* about an intervention as a contributory cause. As such, it explores *how* and *why* interventions are working and for *whom*. In general, CA is undertaken through six key steps (Box 1).[45] These steps are often part of an iterative approach to building the argument for claiming that a specific intervention did make a contribution and exploring why or why not. CA argues that if one can verify and confirm the steps and assumptions in the project intervention logic in practice, and account for other major influencing factors, then it is reasonable to conclude that the intervention in question has made a difference (i.e. was a contributory cause for the outcome).

Unlike statistical approaches based on large samples, CA builds on different sources of evidence to make an argument from which it is reasonable to conclude with confidence that the intervention has made a contribution, explaining why it did. It builds a compelling case – a warrant – about the contribution being made.

Box 1: Contribution Analysis key steps:

Step 1: Set out the specific cause-effect questions to be addressed.

Step 2: Develop robust theories of change for the intervention and its pathways.

Step 3: Gather the existing evidence on the components of the project ToC model of causality: The results achieved and the causal link assumptions realized.

Step 4: Assemble and assess the resulting contribution claim, and the challenges to it.

Step 5: Seek out additional evidence to strengthen the contribution claim

Step 6: Revise and strengthen the contribution claim.

Process Tracing is a method for qualitative analysis which aims to trace causal mechanisms and make inferences about contributing factors within a particular change process.[46] It recognises that causality in social and political action is complex and rarely reducible to single factors, and the sequence of this change is often non-linear. The focus of PT is *not* on quantifying change attributable to a specific intervention, but rather on assessing the *confidence* that an intervention has (or has not) contributed to causing a change. When using PT, focus is on establishing what evidence can help to prove or refute the hypothesis of a particular "contribution claim." Overall, PT makes use of four metaphors to explain the ways in which items of evidence can alter the confidence: the *Straw-in-the-Wind Test*; the *Hoop Test*; the *Smoking Gun Test*; and the *Doubly Decisive Test*. See Box 2 for their characteristics.

The *context* of a given initiative and its stakeholders is vital to PT across all its facets. Making all evaluation decisions through a highly context-specific lens is essential to the success of this method and the quality of analysis. As in the case of CA, PT also links to the importance of developing an overarching project ToC as a foundation for evaluation. Ideally, a context-aware ToC should identify the causal pathways, assumptions, actor dynamics, and interrelationships at play in each unique context. The use of *hoop tests* and *smoking gun tests*, in particular, have shown to be very helpful to focus attention on the probative value of individual items of evidence.

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43 See e.g. B. Befani. B and J. Mayne (2014), *Process Tracing and Contribution Analysis: A Combined Approach to Generative Causal Inference for Impact Evaluation.*

44 ' Causal factors' are here defined as factors that might influence/contribute to the outcomes.

45 Adopted from J. Mayne (2011), *Contribution analysis: Addressing cause and effect*.

46 D. Collier (2011), *Understanding Process Tracing.*

While CA comes out of the field of evaluation, PT emerges from research and analysis of historical events and timelines and provides an approach based on both science and common sense which can be applied to assess the strength of qualitative and quali-quantitative observations and evidence, collected within an overarching CA framework. In view of the long and historical timeframe to be covered by this ex-post evaluation of the RRR Project, the combination of CA and PT elements makes a good fit for the methodological design to contribution assessment. In particular, it brings the following advantages to the evaluation analysis:

- *Integrating analysis*: CA benefits from the more in-depth understanding provided through PT. This will help uncovering and unpacking the intricate causal pathways and mechanisms contributing to change.
- *Combining evidence*: While CA often tends to rely more on quantitative data, PT emphasises the importance of qualitative evidence. Combining both types of evidence will strengthen the evaluation findings.
- *Strengthening iterative processes*: Both CA and PT can be used iteratively. For instance, initial CA may highlight areas where further exploration through PT would be needed, and vice-versa.

Box 2: Process Tracing metaphors:

Straw-in-the-Wind Test *(neither confirmatory, nor disconfirmatory)*: if the evidence is observed, this is not sufficient to confirm the contribution claim. If the evidence is not observed, this is not sufficient to reject the contribution claim.

Hoop Test *(disconfirmatory)*: if the evidence is not observed, the contribution claim is rejected. If the evidence is observed, the contribution claim is not rejected (it passes through the hoop); but it is not confirmed either.

Smoking Gun Test *(confirmatory):* If the evidence is observed, the contribution claim is confirmed. If the evidence is not observed, the contribution claim is not confirmed; but it is not rejected either.

Doubly-Decisive Test *(both confirmatory and disconfirmatory):* If the evidence is observed, the contribution claim is confirmed. If the evidence is not observed, the contribution claim is rejected.

Applying PT usually entails observing a causal process that has occurred over time. In principle, the combination of CA and PT implies a move in the focus of impact assessment from 'assessing impact' towards 'assessing confidence' (about impact). This is in line with the overall ex-post evaluation focus outlined in the ToR and the EQs. Both the CA and PT approaches are grounded in generative causality and take a *probabilistic* approach to the interpretation of evidence.

Finally, both CA and PT have focus on developing an overarching project ToC (step 1-3 in the CA approach outlined in Box 1) as a basis for analysing a contribution claim. Then, specifically for step 4-6 in the CA approach, PT complements the CA approach in terms of what type of evidence to look for and on which criteria to judge the strength of that evidence.

Below, the evaluation team's approach for developing of the specific approach and methodology for assessment of the contribution claim is presented, based on a combination of CA and PT.

Assessment of contribution claims

The test around a contribution claim is centred around three aspects: i) significance of the outcome; ii) level of contribution; and iii) strength of evidence. However, contribution claim is not just about whether an intervention has made a contribution to a result/change or not but also around *how* and *why* an intervention has made a difference, or not, and for whom. It might also explain why the expected change was *not* realised, why the intervention did not make a difference.

The basis of the *contribution claim* is the evidence confirming different *change pathways*, the assumptions behind, and the related causal narratives explaining how causality is inferred. Thus, the change pathways are the outline for the contribution story of the intervention.

An evidence-based contribution claim has two parts: i) the intervention contributed to an observed change - it played a positive role in bringing about change; and ii) it did so in a specific manner. Showing that the intervention was a contributory cause accomplishes both of these aims: i) the intervention was part of a causal chain that was sufficient to bring about the change - which explains how the change was brought about; and ii) the intervention was a necessary part of the causal chain, and hence a causal factor in bringing about the change.

A 'contribution story' initially brings together the contribution claim, which is gradually reinforced through data collection and analysis. It is intended to consolidate, complement and challenge the dominant narratives underlying the intervention being evaluated. Thus, contribution assessment relies on narratives supported by evidence.

Table 1 sets out the four steps for analysis of the contribution claim that has been used in this ex-post evaluation. The four steps combine elements from CA and PT in a pragmatic and operational manner and with a view to what will realistically be possible to cover within the scope of this evaluation.

In order to allow for an element of evidence grading and practical rigor in the assessment of contribution claim, the evaluation team has developed a set of simplified *contribution rubrics* to assess the significance of confidence at each of the four steps.[47] The origins of contribution rubrics lie in PT, and they have shown particularly suited to assess *processes* and *behavioural* outcomes related to development interventions.

The contribution rubrics have been developed as a *traffic light* system for each of the four steps: **Green** indicates a *high significance* of confidence (*full confirmation* of the contribution claim), **yellow** indicates a *medium significance (partial confirmation* of the contribution claim*)*, while **red** indicates a *low significance (low confirmation* of the contribution claim). For Step 4, an example is included of how the traffic light rating is interpreted for the *Smoking Gun* test.

In the case of *Step 2*, which consists of three sub-steps, the traffic light has been developed for all the sub-steps which are then aggregated into one overall rating for the step.

Together, the evidence tools and judgement criteria in Table 1 have been used to build a credible causal narrative to provide the argument and evidence related to how the causal factors at work have played a role in bringing about change.

[47] Inspired by T. Ashton (2019), *Contribution Rubrics.*

Table 1. Contribution claim – Significance of confidence for inferring causality.

Steps	Evidence tools	Judgement criteria	Significance of confidence - partial rating	Significance of confidence – overall rating
1. Checking that a *change process* has occurred	Verifying ToC causal pathways and assumptions, including risk assumptions	• Extent to which the critical causal pathways and assumptions can be verified. This forms the *evidence base* for making the *contribution claims*		
2. Confirming *plausibility* – are the causal links plausible? The Hoop tests! Passing test means that the explanation provided is still plausible. Failing test reduces confidence in the explanation provided. *Evidence here is crucial. If evidence is not there, parts or all of the provided explanation may be inaccurate.*	Logic and plausible time sequence	• Extent to which results along a pathway have been realised in *a logical time sequence* (i.e., cause preceded effect along the causal chain); • Extent to which key *assumptions* have been pre-events and conditions for obtaining of results; and • Extent to which the *timing* of results realised was plausible and consistent with the *ToC timeline.*		
	Reasonable effort expended	• Extent to which the level of efforts (e.g. the size of the actual intervention, including the efforts of any partners) could realistically bring about the expected change		
	Expected-to-see results/changes realised	• Extent to which expected changes have actually happened. If expected changes are not seen, causality is very unlikely. But changes might have other causes.		

3. Building the *strength of the causal narrative*	The causal factors at play are sufficient	• Extent to which it is reasonable to believe that the causal factors are sufficient to bring about change. • Extent to which the mechanisms at work are identified. • Extent to which barriers to change have been addressed.		
4. Confirming a *causal factor–change relation*. The Smoking Gun test! Passing increases confidence in the explanation provided and may reduce confidence in alternative explanations. Failing test means that confidence in the explanation cannot be increased. *Evidence here is unique. Evidence should make a clear connection between the explanation provided and the change.*	Some unique changes observed	• Extent to which some unique changes are observed due to the supported interventions. It is to be noted that this test does not provide evidence of how changes were brought about.		The change would not have happened without the supported interventions The supported interventions made a substantial contribution to a key part of the change, and it would not have happened in the same way without the interventions. Other actors also played a substantial contribution to the change. The change would probably have happened anyway.

First step - checking that a change process has occurred

The search for a contribution claim starts from a change or development result that has actually occurred and then works backwards to the intervention itself, rather than the other way around. Thus, it is important initially to ensure broad consensus and agreement on the key change/development result observed. At this stage, the contribution assessment has been completed up to step four in accordance to the six CA steps (see Box 1).

Second step in the test - Confirming plausibility

Once it has been established that a change has taken place, the next step is to *document the processes* that may have led to that change. Here, the developed change pathways help to guide the process of documentation. The documentation process has also involved developing of a timeline and narrative, describing the different interventions that have been supported, the tangible outputs that were delivered, the resulting intermediate and eventual changes, and external events that may have affected the change (or changes), in the order in which they happened. In addition, it has been documented what was done (or what changed) at different levels and explained how and why it is believed that intermediate changes at one level may have affected change at higher levels.

Third step - building the strength of the causal narrative

In this step, the evaluation team has tried to build an argument that the causal link between one result along a pathway - the cause - and a subsequent result - the effect - did work. The fulfillment of key assumptions (from the project ToC) in particular sets out the framework for the argument, for the causal "story." In bringing about change, one can imagine various constraints or barriers. Here, the assumptions are events and conditions that are expected to overcome these barriers. This has guided the development of the causal narrative. The bottom line here is to set out a sound and valid argument - a causal narrative.

Fourth step - confirming a unique causal factor–change relation

This is the PT *smoking gun test* for a causal factor. *Unique effects* with respect to a specific causal factor are effects that can be realised only if the causal factor was indeed part of the causal package bringing about change. If this is observed, then this is strong evidence that the causal factor played a positive causal role in bringing about the change. It is important to note here that this test does not provide evidence of how the change was brought about, that is, what the other factors in the causal chain did.

It is also important here to distinguish "absence of evidence" from "evidence of absence". This, in particular, relates to the fact that the SDC support has been provided as part of a larger GIZ programme where mainly combined effects of joint donor and government efforts may be possible to establish. Likewise, since support was provided back in time, documentation have in some cases been scarce. In these situations, the evaluation team has been careful not to conclude that there is no effect from SDC's support when this may be due to an absence of evidence.

Annex 3: Detailed Contribution Claim Assessment and Rating

A more thorough and systematic assessment of *SDC's contribution* to development and change processes within the sanitation sector in Kampala has been conducted for the key outcome from the RRR Project: the *Kampala Sanitation Improvement and Financing Strategy*.

An overall ToC has been developed for the RRR Project support and a contribution claim made for the specific project contribution linked to the strategy framework. In addition, and with outset in the project ToC, various *change pathways* have been identified linked to the strategy implementation process.

For the assessment of the specific contribution claim, a four-step analysis approach has been used, combining elements from Contribution Analysis (CA) and Process Tracing (PT) in an operational and pragmatic manner.[48] The four steps can be summarised as follows: i) *checking that a change process has occurred* - verification of ToC causal pathways and assumptions; ii) *confirming plausibility* - testing that the causal links are plausible (the *Hoop test*) in terms of: logic and plausible time sequence; reasonable effort expended; and expected-to-see results/changes realised; iii) *building the strength of the causal narrative* - testing that the causal factors are sufficient; and iv) *confirming a causal factor-change relation* – testing whether unique causal factor-change effects have been observed (the *Smoking Gun test*). For more details and explanation on the methodology, refer Annex 2.

In order to allow for an element of evidence grading and practical rigor in the assessment of contribution claims, a set of simplified contribution rubrics (a traffic light system) has been applied to assess the significance of confidence for each of the four steps. *Green* indicates a high significance of confidence (*fully confirmed*), *yellow* indicates a medium significance (*partially confirmed*), while *red* indicates a low significance (*not at all confirmed*).

Together, the evidence tools and judgement criteria have been used to build a credible causal narrative to provide the argument and evidence related to how the causal factors at work have played a role in bringing about change.

A summary sheet for the testing of the RRR Project contribution claim related to the *Kampala Sanitation Improvement and Financing Strategy* is presented below.

Summary of Contribution Claim rating

Steps	Rating	Narrative
Change process/verification of ToC		The critical causal pathways and key assumptions reflected in the reconstructed project ToC in relation to the Sanitation Strategy are largely confirmed by the data and information collected. This includes assumptions related to the critical roles played by different key actors – such as local and central governments, private sector and other development programmes - at different stages in the process.

[48] See e.g. B. Befani. B. and J. Mayne, (2014*), Process Tracing and Contribution Analysis: A Combined Approach to Generative Causal Inference for Impact Evaluation.*

Plausibility of causal links		
• Logic and plausible time sequence		The time sequencing and intervention logic is large confirmed, in the sense that RRR Project support to preparation and development of the Sanitation Strategy during the project period has contributed to subsequent implementation of the strategy development in the period after 2020.
• Reasonable effort expended		While SDC's investments in the strategy development process have not represented the same financial volume as for instance support provided by GIZ or BMGF, key stakeholders emphasise the significant *complementary value* of the Swiss support in this area, in particular addressing the linkages between research and policy development and stakeholder convening.
• Expected to see results/changes realised		A number of change processes (impact trajectories) directly linked to the implementation of the Sanitation Strategy has been identified by the evaluation team. Some of these are necessary stepping stones and supporting elements in achieving development impact/change. At the institutional level, the strategy implementation has contributed to changes and results in a satisfactory manner. On the other hand, the Sanitation Strategy and framework has not yet contributed to enhanced viable RRR sanitation businesses development.
Strength of the causal narrative		Key causal factors reflected in the reconstructed RRR Project ToC have shown crucial to bring about the expected institutional change processes, leading up to development of the sanitation strategy. Some of these factors were related to the roles and responsibilities of central and local governmental authorities and the engagement of the private sector. These factors were fundamental to catalyse a wider scaling of the KCCA sanitation model in the country. Thus, the interplay between these actors were fundamental in terms of ensuring sufficient institutional support to catalyse wider development of the sanitation sub-sector. At the same time, limited explicit attention to circular economy aspects in the strategy has weakened the causal narrative related to RRR business development.
Causal factor-change relation		From the evaluation team's field visit to Uganda and the supporting documentation, it is evident that some of the major changes and improvements that have taken place in the area of sanitation in Kampala during and after the RRR Project can be contributed to the strengthened research, legal and institutional framework for sanitation management that have taken place with SDC support (up to 2020), manifested through the sanitation strategy development. This enhanced framework and organisation of the sanitation sector has increased the volumes of faecal sludge collected in Kampala, including within poor settlements. There are indications that this is, on the one hand, resulting in improved health and environmental conditions in poor settlements while, on the other hand, the availability of faecal sludge for agricultural farmers (mainly) and energy has increased significantly in response to a high demand (from agriculture). There is also clear evidence of spillover effects from Kampala to other cities in Uganda as well as to other countries in Africa. It is highly unlikely that these changes would have happened without SDC's RRR Project support. In conclusion, the *smoking gun* test is largely confirmed, and the *significance* of the SDC RRR Project support to relevant change processes is rated as *high*.

***Green** indicates a high significance of confidence, **yellow** indicates a medium significance, while **red** indicates a low significance.*

Annex 4: List of persons interviewed - internal only

Imprint

Publisher:
Federal Department of Foreign Affairs FDFA
Swiss Agency for Development and Cooperation SDC
3003 Bern
www.sdc.admin.ch

Orders:
E-mail: info.deza@eda.admin.ch

Specialist contact:
Swiss Agency for Development and Cooperation SDC
Evaluation and Controlling
Eichenweg 5, 3003 Bern
deza.evaluation-controlling@eda.admin.ch

This publication can be downloaded from the ARAMIS-Website

Bern, September 2025