

External Review of the project
"Safe Resources Recovery and Reuse"
(RRR)

OPERATIONAL FINAL REPORT



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List of Abbreviations and Acronyms

AfWA	African Water Association
BMZ	German Federal Ministry for Economic Cooperation and Development
CAPEX	Capital Expenditure
CE	Circular Economy
CWIS	Citywide Inclusive Sanitation
DFID	Department for International Development
EPS	Empresas Prestadoras de Servicios de Saneamiento
FS	Faecal Sludge
FSM	Faecal Sludge Management
GIS	Geographic Information System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GKMA	Greater Kampala Metropolitan Area
GPW	Global Program Water
HIA	Health Impact Assessment
IFC	International Finance Corporation (World Bank)
INACAL	National Institute for Quality Standards, Peru
IRR	Internal Return Rate
IWMI	International Water Management Institute
KCCA	Kampala Capital City Authority
MoH	Ministry of Health, Uganda
MUBS	Makerere University Business School
MWE	Ministry of Water & Environment, Uganda
MVCS	Ministerio de Vivienda, Construcción y Saneamiento, Peru
NEMA	National Environment Management Authority
NGO	Non-governmental organization
NWSC	National Water & Sewerage Corporation
OPEX	Operational Expenditure
POH	Pan-American Health
PUCP	Pontificia Universidad Católica del Perú
REO	Residual Edible Oils
RRR	Safe Resource Recovery and Reuse
S4M	Sanitation For Millions
SDC	Swiss Development Cooperation
SECO	Swiss State Secretariat for Economic Affairs
SME	Small and Medium Enterprise
SOE	State owned enterprise (utilities)
SSP	Sanitation Safety Planning
SWM	Solid Waste Management
TOR	Terms of Reference
TPH	Swiss Tropical and Public Health Institute
UNALM	Universidad Nacional Agraria La Molina
USAID	United States Agency for International Development
WfP	Water for People
WEDC	Water Engineering and Development Centre
WHO	World Health Organization
WSP	Water Safety Planning
WWTP	Wastewater Treatment Plant



0. EXECUTIVE SUMMARY

The "Safe Resource Recovery and Reuse" (RRR) project was launched in 2011 with the aim to increase resource recovery from the sanitation system while at the same time safeguard public health.

Based on the results of the 1st phase (2011-2015), the 2nd phase of the RRR project was launched in 2015 to *"promote and implement globally and at commercial scale recovery and safe reuse models of resources generated from liquid and solid waste streams to promote food security, cost recovery in the sanitation sector, and livelihood opportunities, while safeguarding public health and the environment"* in poor urban and peri-urban areas in Kampala and Lima.

The aim of this external evaluation of the RRR project is to assess not only the level of attainment of the planned objectives, but also the validity and sustainability of the approaches, tools and methods used for uptake and dissemination of the RRR concept and business models.

For this assignment, ECOPSIS has mobilized a team of four consultants, two international, two national. Due to the Covid19 pandemic, local activities were run by the national consultants in Lima and Kampala, with the participation of the international consultants by distance.

The main results of the evaluation are listed in the table below:

Criteria	Outcome	Comments
Relevance		
Of RRR in general	Very high, and increasing importance of RRR for Circular Economy.	Still some obstacles for a deeper integration of RRR into sanitation.
Of a 2 nd phase	Provided a significant opportunity to advocate for RRR.	Paradigm shift changes takes time.
Of the approach	Very relevant for the objectives set in the appraisal documents and the TOR	RRR could have been set as a <i>main objective</i> in the projects, for more impact on paradigm shift.
	Lima: Very relevant for improving the sanitation services, including RRR.	An intermediate step could be legalize informal RRR businesses;
	Lima: Missing accompanying measures to motivate businesses for formalization.	Large companies have already integrated CE/RRR approach into their strategies and have the resources to do so.
Of the SSP	Very relevant both for businesses and the regulatory authorities.	Increased importance during pandemic times.
Effectiveness		
Strengthening the framework	Very effective in Kampala. New standards, guidelines and sanitation strategy. Very effective in Lima with a large public-private workgroup re strengthening the legal + institutional framework + coordination	The documents still follow a <i>"linear"</i> approach and not a <i>"circular economy"</i> approach. Lima: Key focus on RRR related weak or missing legal + institutional framework.
Implementing business models	Very effective for businesses in Kampala. Lima: 4 out of 5 ventures supported were public ventures (municipalities + universities)	The main obstacle remains on the financial + supporting side for private sector. Lima: Private sector withdrew due to missing financial facility and efforts to comply with SSP (standards partially already contained in existing norms)
	Effective training, including SSP	Kampala: Businesses identify their interest in the training and the SSP
Increased productive reuse	Very effective for increased safe management of sludge in Kampala Lima: effective for wastewater reuse, compost production from organic market waste.	Reuse is one of the final outcomes, but not the main objective.



Criteria	Outcome	Comments
	The experience with the 5 pilot RRR businesses is useful for replication.	The informal businesses were not part of the project, would require a comprehensive business development concept
Safeguarded public health	Institutions took ownership of SSP. SSP embedded in city + national regulations	SSP can be used in any kind of business operation (not only RRR)
Efficiency		
Organization	In Kampala, one implementing agency: efficient.	The RRR project supports an existing project (ENWASS) co-financed by BMZ
	In Lima: no clear leadership at the beginning.	Interesting combination of national and international partners, probably too many (coordination effort)
	20% of SSP project implemented by the partners in the countries, 80% by WHO at a global level: efficient.	Experience from the WHO headquarters and the implementing agencies in the countries. No data disclosed for Lima
Resource efficiency	In Kampala GIZ was already installed locally: efficient.	The final report does not detail the expenses by activity.
	SDC generated a leverage for funds from DFID and USAID	USD 1.75 Mio was secured from the three donors combined, under the SSP promotion of the WHO.
Information	Effective dissemination of information to multiple audiences	The businesses also market their products and services.
Sustainability		
Businesses	In Kampala, pit emptiers are expected to be more sustainable than other RRR services supported by the project. 3/5 businesses are active today	No strategy by local RRR stakeholders for future support to RRR business development (after project completion) in Kampala + Lima Severe consequences due to the pandemic.
	In Lima, only one of five venture is active today (effluent reuse). Lima: businesses can expect a positive indirect impact of the Project through the modernization of the legal and institutional framework	
Framework	Outputs expected to be sustainable	They address a real demand
Climate change	FSM & briquettes open a window for future carbon print reduction	Scale up is required for more impact
Impact		
Advocacy	Strong advocacy for better FSM and sanitation services in Kampala Lima: advocacy impacted regulatory work of key stakeholders.	The authorities' ownership is more on <i>sanitation</i> issues than on RRR Project duration is very short
	Increased Peruvian institutional ownership of RRR concerns	Expected to attract future private investments.
Jobs creation	Formalization alone does not attract businesses.	Accompanying measures are required Generate economic impacts need also more time and resources.
	The lack of financial resources have been raised as a major obstacle to attract SME	Adequate financial incentives or facilities are needed to increase the competitiveness and attractivity
Environment	In Kampala significant improvement by collecting more faecal sludge. In Lima, RRR focus will be beneficiary for health and environment	Massive improvement in sanitation, but limited CE dimension.



Criteria	Outcome	Comments
	In Lima, limited direct impact by private ventures	The new framework is for the long term.
	Integration of SSP is considered a significant step forward.	May also contribute to fight the pandemic.
Approach		
Suitability	Most of the objectives set in the appraisal documents have been achieved.	In Kampala focus on improving sanitation including (but not aiming at) RRR. In Lima the RRR objective was more ambitious.
Success factors	Working with partners installed for a long time on site.	Increases efficiency
	Consistent balance between macro, meso and micro.	Activities complement each other.
Failures	No real exit strategy. Lima: no comprehensive private business development concept included.	The main obstacle remains the financial conditions of the small RRR businesses
Lessons learned	Reasonable logical framework with reachable objectives is a condition for success.	Compared to the efforts deployed during the 1 st phase, the achievements on businesses is limited (mostly pilots only).
	One implementing agency makes coordination easier.	Also contributed to the consistency of the activities.
Recommendations		
To SDC	Set <i>Circular Economy</i> as a project objective, with related indicators	The role of a cooperation agency to trigger such a process
	Investigate innovative approaches so to implement <i>sustainable financial mechanisms</i>	For instance ways for supporting local financial institutions (microcredit, guarantees, and so on)
To implementing partners	Extend the inclusion of partners to private sector representatives.	Check/collaborate with ongoing initiatives in town.
	Invest more into "bottom up" approaches.	Provide the businesses with the opportunity to express their expectations
To local authorities	Investigate this opportunity of recognizing the informal sector.	City governments to transit " <i>From Regulators to Enablers</i> "
	Consider financial incentives for future or RRR businesses.	Adapt the legal framework in order to open the door for financial incentives.
To businesses	Apply SSP	For more safety.
	Participate in professional associations.	Select organizations that best match the business's profiles.
	Look for partnerships.	Can take several forms.

Conclusion: the 2nd phase of the RRR project has achieved most of the objectives set in the appraisal documents and the ToR. This is remarkable and should be outlined. It shows that the project was planned with reasonable objectives and indicators, and that the methodology put in place indicated a feasible and good direction.

For a variety of reasons, the two project components in Kampala and Lima have been implemented differently. The component in Kampala is essentially a successful sanitation project - but not so much a "RRR/Circular Economy" project. The Lima project emphasizes more on the RRR issues, but missed the promotion of the private sector into RRR opportunities. However, one can expect that the new RRR oriented legal + institutional framework will facilitate future business entries and developments in the sector.

The third component of the Project (SSP) has been successfully promoted and integrated into national and local undertakings and contributed to the global scaling up of safe sanitation management processes for health and environmental protection. The experience is now used in other countries (e.g. in Asia)



1. INTRODUCTION

1.1 Description of the evaluation assignment

Background The **"Resource Recovery and Safe Reuse" (RRR)** Project focuses on rethinking sanitation systems and turning waste streams into physical and financial resource streams by ensuring and developing safe reuse.

It was initiated by the Swiss Agency for Development and Cooperation (SDC) (Global Program Water Initiatives).

The project has been implemented in two phases:

The Project's 1st phase (2011-2015), also referred to as the research phase, collected and analysed over 100 different resource recovery and reuse models worldwide, ranked them and equipped the most promising business models (21) with a decision support system on where and how to implement them.

Specific feasibility studies were developed in four selected global cities (Kampala, Lima, Bangalore and Hanoi) with the focus on implementing various business models at scale, including assessments of health and environmental risk and mitigation measures for waste reuse.

It was also throughout the three-year phase that the "Resource Recovery from Waste" and the "WHO Sanitation Safety Plan" manual could be developed and tested for their applicability in real-world settings.

At the end of the 1st phase, an external review was led by ECOPSIS [2].

Based on the results of the 1st phase, and the recommendations of the external review, the 2nd phase of the RRR project (2015-2018) situated itself at the interface of resource recovery in developing countries, emerging sanitation-oriented private sector and safe sanitation planning.

The overall goal of the 2nd phase was *"to promote and implement globally and at commercial scale recovery and safe reuse models of resources generated from liquid and solid waste streams in order to promote food security, cost recovery in the sanitation sector, and livelihood opportunities, while safeguarding public health and the environment in poor urban and peri-urban areas in developing countries."*

This was addressed with the following two key objectives:

- Outcome 1: Increase the scale and viability of productive reuse of water, nutrients, organic matter and energy from domestic and agro-industrial waste streams through the analysis, promotion and implementation of economically viable business models.
- Outcome 2: Safeguard public health in the context of rapidly expanding use of wastewater, excreta and greywater in agriculture and aquaculture and protect vulnerable groups from specific health risks associated with this pattern of agricultural development.

Three partial actions that were implemented by three different sets of partners (local and international), under different contractual modalities.

After review of the feasibility studies, the cities of Kampala and Lima were chosen for the continued support and implementation of the project, strongly concentrating on testing and implementing RRR business models, while in parallel promoting SSP and preparing for the global scaling up of SSP.



Aim of the assignment

The mission aims to **evaluate the 2nd phase of the "Resource Recovery and Safe Reuse" (RRR)** Project to assess not only the level of attainment of the planned objectives (at output and outcome level), but also the validity and sustainability of the approaches, tools and methods used for uptake and dissemination of the RRR concept and business models.

The evaluation itself has been performed along the following axes:

- Relevance
- Effectiveness
- Efficiency
- Sustainability
- Impact
- Approach

The evaluation also aims to assess the pertinence of the SSP as an applicable management and policy tool to mainstream waste health risks management in developing countries.

This evaluation shall provide recommendations regarding intervention strategies for future SDC actions in general.

A further lens into opportunities for private sector engagement and the development of circular economy approaches in the water and sanitation sector will also be introduced.

1.2 Methodology

1.2.1 Preparatory work

Desk study

In total, almost 200 documents have been made available, however bearing different importance for the review. For this reason, the Consultants have listed the documents according to the following categories:

- Documents related to the review of the 1st phase.
- Contractual documents of the 2nd phase (credit proposal, TOR, proposals, final reports).
- Project outputs.
- Framework documents (laws, regulations, decrees, norms,...)
- Literature in the RRR sector

In order to facilitate the review a *map of documentation* for the present review has been drafted in Appendix 1. Appendix 2 lists the bibliography.

Preliminary interviews

Contacts have been established with the main actors of the Project. Preliminary interviews have been run by teleconference in June 2020. See Appendix 3.

In order to optimize time and resources, interviews were distributed among the two evaluators. Although the main objective of these preliminary interviews was to organize the meetings, important information was already collected. This has helped to get a clearer picture of the project and the organization. Stakeholders also were keen to raise issues from their point of views.

Inception Report

Based on the collected information and the preliminary interviews, ECOPSIS drafted and submitted the Inception Report on 13 July 2020.

1.2.2 Meetings and collection of information

Impact of the pandemic situation on the evaluation mission

The original methodology (as per ECOPSIS proposal) included field missions to Lima and Kampala, initially planned for the end of September 2020.

During summer 2020, the Consulting team closely observed the development of the Covid19 pandemic, in collaboration with their



colleagues in Lima and Kampala, where the situation was evolving slowly, with a great deal of incertitude about visiting conditions. Many institutions in Peru and Uganda also started homeworking and online meetings.

*An updated
methodology based
on distance
meetings*

In light of the conditions imposed by the pandemic restrictions, ECOPSIS eventually applied an updated methodology based on a higher participation of the ECOPSIS local consultants in Lima (Gabriela) and Kampala (Edward), in order to approach the key local actors available for personal meetings, with the participation of the international consultants by distance.

2. EVALUATION

2.1 Relevance

2.1.1 Of RRR projects in general

*Circular Economy
becomes
increasingly
important*

The relevance of the RRR project was already rated as very high during the evaluation of the 1st phase, completed in 2015 [2]. The evaluation report identified the relevance for positive health, environmental and economic impacts.

Since then, the relevance for the integration of RRR principles into a Circular Economy (CE) approach in development projects has increased. Although difficult to achieve, the opportunity provided by CE is now acknowledged, in many sectors including the water & sanitation sector.

As will be discussed below, the integration of CE in projects must now take a more substantial step. Actions need to be taken at all levels: financial, institutional, legal, social, economic, technical, to generate a paradigm shift in the way projects are planned, promoted, implemented and services provided.

As stated in the TOR [1]: "*resource recovery in sanitation systems must become a key component of natural resources management for sustainable development*".

Need for advocacy

A critical issue that underpins the need for adequate advocacy is a mismatch between the convictions of institutions about the need for CE, and the real demand on the ground for such new approaches.

Although it was not bearing this same term ("Circular Economy"), the promotion of recycling and reuse by-products from wastewater management has been an effort of sector professionals for many years, both in Switzerland and abroad.

These efforts were mainly done by the private sector to grab the financial opportunities provided by RRR and by governments to benefit from substantial economic returns on investments in sanitation and wastewater and incidentally to recover costs and improve infrastructure efficiency.

However, there are still some solid obstacles for a deeper integration of RRR into the sector's development.

This is not only due to political resistance, lack of awareness or low personal commitment of decision makers. Often, one of the most important barriers is the legal and normative framework that thwart, and does not yet support a RRR perspective in the waste sector.

The importance of the legal and institutional component has been crucial in the Project and will be discussed in this evaluation.



2.1.2 Of a 2nd phase of the RRR project continuation

Keep the momentum going

The Project provided a significant opportunity to advocate for RRR at all levels in Peru and Uganda and generated some promising progress.

The evaluation of the 1st phase showed that useful and interesting outputs were made available. In order to gain trust, a wider dissemination and visibility of the results of the 1st phase combined with the implementation of a 2nd phase made a lot of sense.

The implementation of the 2nd phase allowed to recognize the commitment of the many partners involved in the project, keep on the momentum - and *advocate for and actively promote the integration of RRR components* into the national and local sanitation sector at city level.

Advocacy for paradigm shift changes is an important tool for the integration of RRR into the sector (and into specific projects). It takes time, requires resources and commitment, conviction and political will to update the legal framework and support practical ventures.

Build institutional capacity

Institutional capacity development is strongly correlated with, and often required to support advocacy arguments in practice.

Public Utilities usually have a very specific, sometimes limited institutional mandate: i.e. to provide 24/7 water & sewerage services. While complying with this political *priority*, they already face so many challenges in delivering a regular quality service, that they sometimes feel or are not able or capacitated to tackle the integration of additional long term investments or optimized environmental services despite a probably genuine interest in RRR initiatives.

Focus on good candidate cities

Not every city offers the same level of relevance for RRR interventions in the sanitation sector as the two cities chosen.

Lima has a great potential because of its desert and existing economic conditions. There is a natural demand for wastewater reuse in the city and the country. Municipalities identified the need, and wastewater reuse for public green area irrigation has been done since 1964. Larger companies (e.g. in the mining and brewage sector) have added a proactive water management and even CE into their operational strategies¹. 70% of Peru's workforce are in the informal sector and many of them work in waste recycling².

Kampala is characterized by high population density and an entrepreneurship friendly environment with hundreds of small waste service providers. It has real potential as initiatives already started both in the private and the public sector (e.g. the Municipality is implementing large waste projects and is aware of the need to strengthen the link with the private RRR sector) [56][57].

2.1.3 Of the approach applied in this 2nd phase

Design

In Lima, the Project approach correctly emphasized rather successfully the institutional strengthening, but the design did not really involve a commercial RRR strategy to increase the citywide impact on waste management with both the formal and informal sector. (It must be

¹ Cf [Brewery Brackus](#); the mining company Cerro Verde S.A.A. invested USD 400 million into wastewater treatment and reuse of effluents near [Arequipa](#). In Tacna, Chiclayo and Lima there are about a dozen wastewater reuse agreements between the WWTP and municipalities and/or private firms.

² COSUDE has actually been promoting an interesting project with the private sector in countries along the pacific coast, "El Agua Nos Une" – assessing Corporate Water Footprint and the use of water footprint tool to manage water-related impacts with a life cycle approach, mobilizing more than 60 enterprises since 2011 in Chile, Peru, Colombia, Mexico, Brazil. <http://www.waterunitesus.org/>



mentioned that the Logic framework for Lima did not formulate such a citywide impact, but limited the outcome indicators to a small set of individual projects, i.e. *2-3 business plans and 1—2 action plans*.).

In Kampala, the implementing agency (GIZ) integrated the RRR Project into its ongoing projects (RUWASS, UNWASS) with a focus on wastewater and faecal sludge management (FSM). The key objective of the GIZ projects was to improve the overall FSM. RRR dimensions are part of the project (for instance for the reuse of treated sludge) – but they were not the main objective of the GIZ project

It must also be mentioned that the Logic framework for Kampala did not formulate the said impact, but focused e.g. on "*City-wide infrastructural standards for sanitation facilities*" and that "*RRR business pilots are applying SSP to improve the safety of their services*", reflecting the focus on improving FSM.

§2.2. on effectiveness below provides more information about the activities and achievements of the two interventions.

If the objective is to increase market potential and health of formalized businesses, then yes, the design was adequate and in line with the respective ToR.

The logic frameworks also state the goal "*implement viable businesses models*" and this has been interpreted by the projects as "formalization". But "formalization" does not necessarily translate into "viable". Moreover, "formalization" can be counterproductive for viable, at least in the short term.

Target group

The two approaches correctly identified the key public target groups to be addressed, essentially public and academic institutions, responsible for policies, regulation, coordination, education and also SOE).

Although the Lima approach effectively supported a few selected RRR businesses, it missed the opportunity to support the *private sector (SME) as a key target group*, already active in the sanitation sector.

Financing is usually a critical issue for business development. The approach in Lima analysed such opportunities, but did not include the provision of concrete financial possibilities as part of a broader development concept for micro-scale waste businesses. (As mentioned earlier, large private companies in Lima and worldwide, such as Nestlé, depend on water quality and quantities. They did not wait for such Project and already integrated RRR or CE concerns into their global operational (water risk management) strategies.

In the evaluation of the 1st phase, it had been suggested to also include collaboration with chambers of commerce, representatives of businesses or professional associations as a preferential link with the private waste sector.

The information about the activities may suggest that the two projects did not fully contemplate the distribution of responsibilities between the public and private sectors and the needs of the (informal) entrepreneurs that work every day in a most competitive context.

Formalization or legalization?

Firm informality is pervasive in many countries, and Uganda and Peru are no exception. From a Government point of view, the informal status of many firms substantially reduces the tax basis and therefore affects the provision of public goods.

Formalization of businesses can provide advantages for employees and owners. However, in the two cities, formalization is a complex and bureaucratic undertaking, costly and difficult to handle for micro-scale businesses. Formalization alone does not necessarily increase business development.



In Lima, micro-scale and SME entrepreneurs and businesses, have been reluctant to undergo a costly formalization process without certainty about access to funding and other practical benefits.

In Kampala, the municipality combined the formalization of small businesses with access to new markets, through a call centre for pit emptiers. However, this is not an advantage provided by formalization itself, but by the accompanying measures provided in parallel (support access to markets).

In Lima, only one out of 5 projects was a kind of private undertaking, X-runner, a non-profitable social company with guaranteed foreign funding. All other ventures were undertaken by public institutions and the Project had no need to emphasize the formalization aspect or to establish contact with the Peruvian program "Peru Formaliza".³

Instead of aiming at a full formalization at once, an intermediate step could have been to introduce the concept of a "legalization" of micro-scale informal RRR businesses, facilitating the access to markets and the development of the business, ideally combined with other types of assistance/coaching and financing opportunities.

Whom does RRR profit?

The evaluation of the 1st phase showed that local actors (public authorities, NGOs, private sector associations representatives were not always able to identify the beneficiaries of the RRR activities.

In the 2nd phase of the project, the main direct beneficiaries (including a political credit) have been the public institutions in both cities; in Lima those related to RRR, in Kampala those with focus on FSM conditions (and not RRR specifically).

In both cities, very few already existing businesses have benefited from the Project, but the private sector may hopefully be an indirect beneficiary in the future once the set of adjusted legal and institutional conditions fully apply.

2.1.4 Of the SSP component

For improved health conditions

WHO identifies and recognize that the introduction of SSP is a useful, but challenging regulatory tool [168].

As far as the reuse guidelines are concerned it is worth mentioning that they have been in use and applied by many actors and projects⁴ in the sanitation sector since they were published (back in 1996 and 2006).

The well-structured SSP, more practical than the original guidelines, have been well received by the public institutions and will certainly continue to orient many public and private sanitation reuse policies and projects in the future. SSP has also gained importance during the pandemic, since any protection measure should contribute to reducing contamination.

SSP can apply to the informal sector as well, Informal does not mean irresponsible. SSP does not focus on reuse specifically, but supports safe conditions if and when RRR is undertaken.

Many institutions in both countries have integrated the SSP or SSP principles into their policies and normative framework and are developing enforcement and monitoring capacities.

In Lima, some of the SSP requirements had already been regulated earlier, but were stated in different standards or laws, while the SSP provided a comprehensive approach about the full set of underlying risks and its management. Since the end of the Project, the promotion and

³ Peruvian Ministry of Work and Job Promotion has created an Center for supporting the formalization of businesses "[Peru Formaliza](#)".

⁴ Also by ECOPSIS in many wastewater projects



dissemination of SSP is taken in charge by the PHO (Pan-American Health Organization).

In contrast with the public sector, some private businesses interested in benefiting from the Project in Lima and to protect themselves and clients from health risks, were reluctant to undergo the challenging effort to apply the full SSP in their business strategy and preferred to comply with the different existing legal requirements they already knew and applied.

*For safe
development of the
RRR activities*

Training is a useful SSP promotion tool for specific waste businesses, that wish to introduce the principles progressively into their operational strategy and achieve a kind of quality seal. "Training" may include an "online platform"⁵ in local languages and assistance for the implementation by PHO or another national institution.

2.2 Effectiveness

2.2.1 Strengthening the legal and institutional framework

*Useful framework
documents*

In Kampala, the project focused on FSM. As a consequence, the strengthening of the legal and institutional framework in Kampala covered several activities aiming to facilitating, regulating and promoting businesses that are involved in providing FSM services.

The first output was to produce documents that will frame the activities of the businesses and support all actors involved for a better and more optimized way of doing business and implement FSM projects.

This objective of producing framework documents has been quite successful in Kampala:

- A Sanitation Strategy for Kampala (with a specific focus on FSM) has been developed and approved by KCCA
- City-wide infrastructural minimum standards for sanitation facilities that can be emptied have been adopted by KCCA and are being enforced
- Guidelines established by KCCA for safe FSM and reuse of FS are now available.

Globally these documents match the state-of-the-art requirements. Although they don't mention them explicitly, the documents are inspired by and include components from the SSP.

However these documents still follow a "*linear*" approach and not yet a "*circular economy*" approach.

They indeed identify reuse where appropriate, for instance for FSM - but they are drafted conventionally for sanitation projects. Their first objective is to support service regulation (by KCCA) and not promote a commercially viable circular economy/RRR approach⁶.

In Lima, the project implemented successfully a platform, the public-private workgroup composed of 17 regular members, whose mandate was to coordinate the participation of the different actors in order to promote a favourable environment for the introduction, implementation and monitoring of RRR activities and undertakings, apply the approach of SSP and influence the regulatory framework and public environmental and health policies in Peru. Subgroups reviewed, analysed and proposed technical-regulatory RRR solutions in 4 priority reuse business model lines (out of initially 16 proposed): wastewater/sludge treatment, reuse of edible oils and organic market waste.

⁵ https://www.who.int/water_sanitation_health/publications/ssp-manual/en/

⁶ See related analysis in §2.6.1.



Among the important normative achievements are the preparation of the following normative proposals and technical assistance to the institutions:

Reuse of Wastewater and WWTP sludge:

- Manual on technical conditions and mechanisms to promote agreements between WWTP and users (farmers, private companies or municipalities), for the use of wastewater for agricultural, forestry and green area irrigation;
- Report on the advocacy process for the enactment (decree) of the Maximum Permissible Limits (LMP) for the reuse of treated effluents in agricultural, forestry and green area irrigation; planned for 2021;
- Proposal on mechanisms that facilitate the formation of APPs (private-public associations) between private companies and municipalities that want to irrigate their green areas with treated wastewater;
- Normative guidelines that include new technological processes for the treatment of wastewater, to be incorporated into Standard S.090 for Wastewater Treatment Plants (postponed to 2020);
- Guidelines for a program to monitor and control the use of treated wastewater for agricultural, forestry and green area irrigation,
- SSP: Preparation of an agenda to promote the use of the sludge generated by the WWTPs.

Reuse of Residual Edible Oils (REO)

- Guidelines for the formulation of Municipal Ordinances for the management and sustainable management of REOs, the document includes public and private operators (collection, reuse) and monitoring guidance, under review for approval;
- Advocacy aimed at local government officials in metropolitan Lima, on guidelines for the formulation of Municipal Ordinances for the management and administration of REOs;

The Project also provided technical advice to municipalities to prepare their respective Ordinance for the sustainable management and management of REOs (closed to be approved in Lima).

Reuse/Recycling of Solid Organic Waste:

- Review of the Peruvian Technical Standard for Compost proposal and participation of the INACAL fertilizers group (National Institute for Quality Standards);
- Formalization of the Los Olivos Compost Association;
- Basic manual for the production of compost, minimum standards, technical and market aspects;
- Program proposal for the separation and reuse of organic waste at municipal level.

The Project also supported the implementation of 5 RRR businesses:

- 1) X-Runner, compost production from excreta by a social enterprise (project not profitable, abandoned, sludge treatment too costly and limited revenues)
- 2) Compost production from organic market waste for municipal green areas, by municipality Los Olivos (project probably profitable, but abandoned in 2019)



- 3) Compost production from organic market waste, by the Flower market Bio Compost (Abono) Santa Rosa, El Rimac, Lima (project unfortunately abandoned⁷)
- 4) Biodiesel production from edible oils, by Catholic University PUCP, (no funding for development of pilot plant, project without funds suspended)
- 5) Wastewater reuse for green park irrigation, by municipality of Lima (ongoing)

While the normative and advocacy work with Peruvian institutions has been very successful, the project axis did not perform as expected. 4 out of 5 projects were undertaken by public institutions and some municipalities changed their political agenda after the elections.

In 2017, the Ministry MVCS has finally authorized the reuse of sludge and WWTPs are eager to sell, but there are no national experiences that support the required quality, markets and prices. The Project proposed that SUNASS (the Peruvian regulatory agency for water & sanitation services) extends its investigation about Peruvian WWTP with data about quantities and types of sludge; ongoing. The ongoing process reflects the impact of the PPP workgroup and SSP promotion.

2.2.2 Implementation of economically viable business models

Formalization of FSM businesses

In Kampala, formalization of the FSM businesses is a central point of the RRR project⁸.

MOUs have been developed between KCCA and the two existing private operator associations (1 for cesspool operators and 1 for gulper operators) [11][12]. Steps have been taken towards streamlining the licensing requirements for FS transporters and handlers by the regulatory authorities, that is KCCA, NEMA, NWSC and MWE [61].

As a result, 10 FSM private operator have acquired KCCA approval permits to operate in Kampala, and 6 of these also have acquired NEMA licenses to operate outside Kampala.

KCCA's mandate is only for Kampala, while NEMA regulates effluent and waste discharge in the whole country. NEMA's participation in the drafting of the new standard [25] was based on the understanding that NEMA would roll it out beyond Kampala to other cities. Today, the new standards are applied by NEMA in Gulu, Jinja, Soroti, Mbale, Mbarara, with others yet to be upgraded soon.

Service provision monitoring systems have been established through a GIS mobile tracking application.

A toll-free call centre number was acquired and is currently used by clients to request for emptying services and any FSM related information.

These results are significant and very useful. They are in line with the development of the FSM sector for many years in Kampala, supported by several actors including GIZ.

Today the FSM situation in Kampala can be ranked among leading cities in Sub-Saharan Africa, together with Dakar.

In Lima, all business models operated as formalized businesses, 80% were undertaken by public or academic institutions such as municipalities and universities. The challenge was not formalization but financial viability, sustainability and continued political support.

⁷ Nice short [video](#) of the venture.

⁸ The impact of formalization on job creation and the environment is discussed in §2.5



*Formalization of
other RRR
businesses*

In Kampala, the project has supported 5 small existing RRR briquette production businesses in terms of technical training and coaching on the production of FS briquettes from sludge re record keeping, market testing and drive shows [61]. Today, only 3 remain in operation.

These 5 businesses have only gone through partial formalization. One has a trading license (which all businesses in Kampala pay to KCCA depending on their classification from A, B, C). Another one is operating entirely under the NGO Water for People as a brand.

No business has obtained permits or licensees to handle sludge waste from NEMA and KCCA.

This formalization process is still underway. It is however quite difficult for the businesses. As stated in [39] *"many of the micro and small businesses supported in this project do not have the capacity to meet the standards and the costs involved in getting certified."*

The situation is thus different than for FSM operators which draw benefits out of the accompanying measures provided by the public sector together with formalization.

*Financial
challenges*

Training is definitely useful for small businesses. But their main obstacle is not on the technical side: many of them have been operating for many years and know production and markets.

The main obstacle is often on the financial side. Working capital needs have hampered business development. For example, competition in the briquette making business is stiff and margins tight. Small profits earned from selling small quantities of briquettes limit the acquisition of modern equipment that could step up productivity and consequently increase sales.

Every business involved in waste reuse is at a different level of development. Some are very clear about what they need others are still figuring out how much funding they require.

When asked about their financial requirements for growing, the 3 interviewed businesses in Kampala expressed amounts ranging from USD 10'000 to USD 100'000, with an average around USD 50'000. They expressed this requirement *"to purchase permanent premises and mechanise production and meet the costs of mechanised production e.g. electricity, water and continuous training"*.

For this reason, most of these firms expected also direct financial support alongside general business development support from the RRR Project.

The same applies for Lima, where all interested private firms withdraw from the Project, X-Runner being the exception with social funding received from abroad.

*Training of all
businesses?*

In Kampala training was only delivered to formalized businesses or businesses in the process of being formalized.

In Lima, all the mentioned ventures received training and coaching. A few others firms abandoned the program at a very early stage due to the lack of financing and the necessary efforts for them to comply with SSP standards, partially already contained in different existing national standards.

While formalization was recommended in the evaluation of the 1st phase and included in the Kampala logical framework, it was not initially identified as an objective in the credit proposal, which only seeks *"To implement safe reuse models while safeguarding public health"* [4].

This raises the important question about the impact of formalization on small businesses. It might be the case that many informal businesses existing in town would dramatically benefit from a training session, and could apply what they learned to strengthen productivity in their daily work,



as well as protecting the health of the workers and the public. But efforts and costs remained barriers for a broader integration of micro-scale businesses.

2.2.3 Increased scale and viability of productive reuse

*Pit emptiers access
an increased
market*

In Kampala, the accompanying measures implemented in parallel of formalization (in particular the call centre and centralization of client's requests) have provided the emptiers with increased access to the market.

A monitoring system for the licensed and to-be licensed service providers has been set up through the installation of a mobile phone-based GIS-tracking App known as the Weyonjje App⁹. It is used by the FSM call centre to dispatch job orders received from customers giving preference to the service provider nearest to the customer. Operated by KCCA.

This centre has definitely lead to increased sales and productive reuse for FSM management.

*The informal
businesses are not
part of the project*

The 5 businesses (briquettes) contemplated by the study, have gained in solidity and technical and financial competences - but did not increase their profitability of product reuse yet.

Since there are still ongoing a formalization procedure, this might happen at a later stage if the public authorities provide some kind of support to them, similar to the one that was provided for the FSM businesses (support to access more market, joined forces in a professional association, publicity and so on).

The contribution of these five businesses for the overall waste management in the Greater Kampala Area remains marginal. However, it could serve as a demonstration pilot, to be upscaled at a later stage.

The important question at this stage is about the informal sector and its development potential. There are hundreds of informal waste businesses active in the RRR sector in Kampala. In terms of scale, these informal businesses provide a significant contribution to the quality of the environment¹⁰ [57].

Despite their importance, they were however not considered in this RRR Project, or only as potential actors to be formalized.

*A good but linear
sanitation strategy*

One important document as a basis for a future increase in scale and range of RRR opportunities is the Kampala Sanitation Strategy [19].

Although this strategy focused on sanitation and FSM, it integrates some RRR components (including aspects of SSP) but remains a "*linear*" strategy¹¹ and not a "*circular economy*" strategy: the objective is to provide the best service, at affordable costs, while protecting the health and the environment.

The RRR dimension is integrated like a transversal theme: it exists, bears importance, but is not a key objective of the strategy.

To be clear: the Kampala Sanitation Strategy is a good document which will be very useful for many actors in the sanitation sector. It complies with the state of the art and in particular with the CWIS approach¹². It also

⁹ <https://play.google.com/store/apps/details?id=com.kcca.fsm&hl=en&gl=US>

¹⁰ Effective Solid Waste Management (SWM) contributes to the quality of the water bodies. For this reason SWM was part of the business models studies during 1st phase.

¹¹ "take-make-use-dispose and reuse if possible".

¹² CWIS is a paradigm shift in urban sanitation, and places equity, public & environmental health and coexistence of hybrid sanitation systems at its centerpiece. It is promoted by EAWAG (among others).



complies with the existing legal and institutional framework in place in Uganda.

Nevertheless, the Kampala Sanitation Strategy provided an opportunity to comply with the existing legal framework *and at the same time* introduce a circular economy objective. This opportunity was not grabbed.

2.2.4 Safeguarded public health

Extensive SSP trainings have taken place.

In Uganda, the SSP initiative now has a group of seven experienced multi-lingual trainers with manuals in 8 languages. The trainers have developed and refined a flexible training package as well as case studies to demonstrate examples of SSP in practice [174].

WHO trainers have conducted trainings in dedicated workshops and events within conference programs around the world and through online webinars and courses. Regional trainings involving a total of 48 countries and over 200 participants have been held [174].

Country support to the other RRR components in Kampala and Peru is completely working with GIZ/KCCA and Swiss TPH/Cewas respectively.

In Kampala KCCA took strong ownership of SSP and can be held up as a model of SSP implementation at city level with SSP embedded in city regulations [174].

In Lima SSP training and implementation was completed with entrepreneurs and all national (institutional) stakeholder supported by the WHO SSP component of the RRR project with the help of the WHO regional office and the Swiss TPH. An SSP policy brief for Peru was also prepared [174].

In addition WHO provided technical input to the proposal for European Commission legislation on the safe use of wastewater that now includes SSP as the approach for health protection [174].

Champions

The creation of SSP champions in Kampala has been achieved. KCCA scaled up SSP to division level and developed a citywide SSP plan integrated into the KCCA Public health and FSM activities [61]. Several activities were implemented.

In Lima, the Project through the public-private workgroup was able to integrate the SSP principles in the normative proposals. MVCS and MINAM have now taken the lead in the application of SSP.

Dissemination

WHO dispose of a large experience in promoting and disseminating such guidelines that are increasingly being applied by actors at both local and international level.

SSP application broader than reuse

It should also be reminded that the SSP can be used in any kind of business operation in FSM and WW and are not only limited to RRR businesses.

2.3 Efficiency

2.3.1 Organization

Two cities = two projects

In Kampala, only one implementation agency was hired. The contract between SDC and GIZ was signed in September 2015 [7].

Both donors contributed to one project called "Reform of the Urban Water and Sanitation Sector programme" (RUWASS). This was considered a strategic partnership because at the time, the RUWASS program had a strong focus on supporting private sector engagement in the urban sanitation sector while at the same time strengthening the regulatory framework and supporting institutions such as Kampala Capital City



Authority (KCCA) and the National Water and Sewerage Cooperation (NWSC).

The project extension (2017-2020) was undertaken by GIZ for the "Enhanced Water Security and Sanitation program" (ENWASS), the successor program to RUWASS [61].

GIZ's presence in Kampala and its long lasting experience in the sanitation sector, have proved to be an advantage, one implementing agency was able to coordinate all activities.

This organization appears to be more efficient than the one implemented during the 1st phase of the Project. It is also easier to work in two cities on specific implementation objectives than on a feasibility study covering four countries.

In Lima: The Project was implemented by a broad consortium, in principle an interesting combination of experienced national and international partners, but required big coordination efforts among the probably too many partners. A missing clear leadership at the beginning resulted in a longer setup phase and additional management efforts.

Additionally, the Project organization had to cope with many institutional stakeholders requiring – despite their positive commitments - also time-consuming coordination efforts and additionally with the consequences of critical political events (presidential resignation in March 2018), municipal elections and the refusal of the Ministry of Finance to participate in regulatory discussions about wastewater reuse concession tariffs.

*Long-lasting
collaboration with
local partners*

In Kampala, GIZ has worked together with local partners [61]:

- Ministry of Water and Environment (MWE) was the political partner on BMZ component.
- Kampala Capital City Authority (KCCA) was the lead partner for project FSM interventions in Kampala. Played a key function for the coordination of sanitation planning.
- Water for People (WfP) was the Implementation Partner through a financing Agreement to support RRR business models development, capacity building of the gulper private operators and implementation of the FS mobile transfer tank technology. Will also continue to support RRR business development after project closure.
- National Environment Management Authority (NEMA) was the partner on licensing and regulating the transportation of waste that includes faecal sludge, as well as regulation of FS treatment
- National Water and Sewerage Cooperation (NWSC) was responsible for monitoring FS Emptyer operations at the treatment plant (ensuring wearing appropriate PPEs, follow Standard operation procedures) and treatment of FS. It also supported RRR business development by supplying treated FS for reuse options.

GIZ has been collaborating with these partners for a long time, on sanitation projects, in particular with KCCA. Thus the RRR project came as continuation.

Despite the long term relationship with these partners, it is worth mentioning that the collaboration remained dynamic and dedicated to reaching the objectives. This was also noted during another external evaluation¹³.

In Lima, the collaboration in the public-private workgroup has been considered by all parties as an promising experiment and has strengthened

¹³ In 2019 ECOPSS also ran the final evaluation of the "[Sanitation 4 Millions](#)" project implemented by GIZ in Uganda.



a network of professionals in this sector. However the workgroup of the Project ended its meetings in the beginning of 2020. Some normative proposals are still evaluated inside some institutions for official approval. Some of the national and international consortium partners also continue to work on RRR issues.

SSP at global and local level

As shown in Appendix 1 below, the organization of the SSP component has been developed on two fronts:

- A global component, implemented by the WHO headquarters in Geneva.
- At city level in Kampala and Lima, respectively by the implementing agencies in charge.

Part of the SSP project (~ 20%) is implemented by the partners in the countries (GIZ in Kampala, Swiss TPH in Lima). But the major part of the budget (~ 80%) was executed by WHO directly, at a global level. Activities have also been developed in India and Jordan for example.

This organization has proven to be efficient. It took advantage of the respective experience from both the WHO headquarters for actions at the local level and the implementing agencies in the cities.

2.3.2 Resource efficiency

Taking advantage of an installed partner

SDC contribution (EUR 1 mio) contributed with 50% of the total budget of EUR 2 mio, the other 50% being supported by the German Federal Ministry for Economic Cooperation and Development (BMZ) [61].

The GIZ proposal [6] included a detailed budget *by activity*. For example, € 80'000 for the support provided to KCCA for issuing new standards and guidelines.

This detailed Kampala budget by activity was only indicative. The activities were not as detailed as in the logical framework and the detailed budget was not used as a monitoring reference. The final report submitted by GIZ to SDC [61] does not detail the expenses by activity, but only by position (staff, travel and so on). It is therefore difficult to assess the efficiency of each activity.

The mobilization of new partners in a country is usually very expensive. Beyond the real costs (rent, installation, equipment, hiring staff), a new partner has to establish relationships and develop trust with local partners. This was not the case with GIZ: being on the spot for so long, active in the sanitation sector, liaising with local partners, provided the opportunity for an efficient execution of the project.

The Lima Project component had a budget of CHF 400'000 that was used by the consortium. SDC-Peru provided a small complementary fund to finalize some activities at the end of the Project. The allocation of the budget among the partners or by activity has not been disclosed for this evaluation.

SSP SDC contribution (CHF 1 mio) contributed to 57% of the total budget, the other 43% being supported by the DFID and USAID.

The original SSP preparation for scaling strategy foresaw a total investment of USD 3.3 million. In total USD 1.75 million was secured from the three donors combined (SDC, DFID and USAID). As a result, investments were scaled back across each outcome area to make greater use of remote learning opportunities and SSP application at country level working in technical support to other implementing partners to achieve similar results [174].

The SDC contribution generated a leverage effect to mobilize additional funds from DFID (USD 294,000) [174].



2.3.3 Information & communication

International presence

A communication and dissemination strategy was developed by GIZ and implemented in Uganda to ensure effective dissemination of information and knowledge generated throughout the RRR project and also communicate its outcomes to multiple audiences including the business, water and sanitation communities, media and the public during the project's term and beyond.

The main communication channel utilized was the SuSanA online platform¹⁴ and RRR presence and participation in 3 international conferences (AfricaSan 2019, WEDC 2018 and AfWA 2020) [61].

Marketing efforts by the businesses

The businesses themselves took the opportunity to market their products and services nationally. This contributed to dissemination of the RRR concept.

As an example, the company "Best of Waste" issued nice videos informing about their activities¹⁵.

In Lima the Project partners opened a dedicated website and still maintain the memory of the project in their institutional website¹⁶.

2.4 Sustainability

2.4.1 Of the businesses

Private sector participation means some losses will occur

The chances of success of private start-up companies depends on different factors, ranging from financial solidity to technical and general management and marketing capacity. Despite the base quality of a business model, including commitment and dedication, businesses cannot always cover all risks and failure rates may be high during the first critical 5 years.

Even specialized social funds like Acumen with highly qualified coaches and worldwide experience do not avoid poor investments. On the contrary, a good part of what Acumen funds fails. A rule of thumb in the social investing world is that 10% of the ventures work out (the rest fold) and only 1% reach significant scale¹⁷.

The challenge to support informal business development is enormous.

Perspectives in the long run

In Kampala, formalized and recognized by KCCA, accessing a solid market through the call centre and the application, the emptiers are expected to be more sustainable than other RRR services supported by the project.

So far none of the emptiers involved in the project (formalized by KCCA) has defaulted – and they are even paying back loans.

Their participation in the professional associations (GAU & TAUDEL) also contributes to the sustainability of the pit emptiers.

As far as the 5 briquettes businesses are concerned, market for fuel briquettes in Kampala is huge; there is increasing pressure to abandon charcoal and fire wood as they are direct products contribution to the worsening decline in forest cover countrywide.

¹⁴ <https://www.susana.org/en/knowledge-hub/resources-and-publications/library/details/3578>

¹⁵ <https://drive.google.com/drive/folders/1UIdFfxpYDQNuFN3TEwxa68gbYltc5Gcg>

¹⁶ Visit "RRR" at [EAWAG](#), [Swiss TPH](#), [IPES](#), [SEECON](#) and [SDC Peru](#)

¹⁷ \$5, Banerjee Abhijit V., Duflo, E. Nobel prize 2019, Good Economics for hard times, page 188, 2019..



As a consequence, competition in the briquette making business is stiff and margins tight. Many informal firms are nowadays getting involved and without standardization everyone producing by his own standards.

Small profits earned from selling small quantities of briquettes limit acquisition of modern equipment that could step up productivity and consequently increase margins.

The size of the business is also a relevant criterion for sustainability. The five pilot businesses supported by the project are still micro-scale businesses. As such, they are more at risk than SME and bigger companies.

No specific measures to support RRR businesses in the long run - that is *after* Project completion - has been put in place by the Project. This is questionable as the RRR businesses contribute to a common good and support the public authorities in meeting their environmental and health objectives.

In Lima, only one of five venture is active today, the effluent reuse for irrigation by the municipality of Lima, an activity with the highest demand and practiced since 1964 in Lima and for centuries in the country. Under the climatic conditions in Peru, this category of reuse will certainly become even more an attractive investment opportunity for public and private investors in the country.

But Peru should also benefit from an indirect impact of the Project through the modernization of the legal and institutional framework, an important condition to legally operate a business in the waste RRR sector.

One can also hope or even assume that projects undergone by a university (PUCP) like the biodiesel production may one day be started again, maybe as a spin-off by young entrepreneur-researchers, understanding the huge oil and energy market opportunities in Peru and Lima¹⁸.

The organic market waste composting project category has now become a mandatory government policy for municipalities and should eventually see a revival throughout the country substituting compost imports from Chile.

Impact of the pandemic

It is not yet possible to assess the full magnitude of the economic impact of the lockdown, but the consequences for incomes and poverty during lockdown are severe in the informal business world. Information from July 2020 show that many informal entrepreneurs in Kampala (including RRR businesses) had no income at all during the lockdown, and hence had to dip into their own savings, rely on government food support, and ask for help from family or friends to survive [53].

Nevertheless, the demand for their services will not disappear. These business are expected to resume their activity once the pandemic is over.

SSP reduces the rate of absenteeism

Good operational business management regards the protection of the employees' health as an important factor, in particular when dealing with waste.

SSP can support businesses managers' interest in applying practical health protecting measures.

¹⁸ It is estimated that Lima produces yearly about 10'000 gallons of edible oil (available for reuse). Ethanol production in Peru was expected to reach 161 million liters in 2018. Ethanol imports in 2018 are forecast at 200million liters. Biodiesel production was forecasted at 62 million liters in 2018 while imports are forecast at 274 million liters. Peru does not provide tax incentives or set prices to directly support profitable biofuel margins that would give biofuels an advantage over fossil fuels. Instead, Peru relies on the mandatory blend rates of 7.8 percent for ethanol and five percent for biodiesel.



2.4.2 Of the framework conditions

Committed authorities

In Kampala, the commitment of the public authorities is quite high and has been active for many years. KCCA has a clear mandate for sanitation management in town, And the ownership for sanitation services in Kampala is high.

In Lima, commitment of relevant authorities has been high and seems to continue although without the previous level of coordinated activities during the Project implementation phase.

Sustainable outputs

The outputs issued during the project in Kampala (guidelines, standards, strategy) address a real demand from the sector, both by implementers (providers) and regulations authorities.

For this reason, outputs are expected to be used permanently.

In Peru, the Projects has provided very practical inputs for the modernization of the regulatory framework that have been already integrated in official documents that have become the new standards.

Follow up on training

The MUBS in Kampala was established in the 1960s and has been delivering training courses to businesses since then. The sustainability of training capacities at this level is expected to last. It also addresses a real demand by the candidates, in a political environment that promotes the participation of the private sector.

This training capacity is then expected to be able to support candidates on the long run. However two limitations have to be considered:

1. the training courses are not specific to RRR businesses
2. the MUBS capacities are also limited and may require support if a boost in private sector participation is sought in the RRR sector.

In Lima, two universities, PUCP and UNALM have integrated RRR themes into the official academic curriculum (wastewater reuse, sludge treatment, biodiesel production).

The Project has not organized any further training (beyond project completion) for businesses on RRR issues, but public and private business training and coaching courses are available in Lima.

2.4.3 Of the contributions to fighting climate change

Collecting sludge paves the way for future carbon footprint reduction

Collecting and treating more faecal sludge makes it possible to concentrate the efforts into one single point (the treatment plant). This provides the opportunity to use it for energy generation (biogas) and reduce the carbon print.

In Kampala, a study has been run by NWSC that shows that treated sludge is poorly anaerobically degradable with low biogas production but co-digestion with brewery sludge enhanced the biogas production rate, while co-digestion with cow manure was not beneficial [59].

Studies and pilots are still needed to reduce the carbon footprint of the sanitation systems in Kampala. Nevertheless the project has contributed in that direction by optimizing and regulating sludge collection.

Abandon charcoal and firewood

Promoting the use of briquettes instead of charcoal and wood will eventually also turn into a contribution to reducing climate change.

The increase environmental concerns about climate change caused by charcoal burning in Kampala has strategic opportunities for the FS sector as an alternative source of energy. Most of the population is expected to be aware that charcoal burning is not a sustainable source for burning¹⁹. It is however considered useful to communicate on the safety of FS products

¹⁹ This assumption needs to be checked with field studies.



as an option to charcoal. This will open up more market space for the sector .

The Project in this 2nd phase did not show it with only five businesses, but the example is set and it will be worth making it a showcase both for Uganda and other countries²⁰.

*Part of the
Sanitation Strategy*

The Kampala Sanitation Strategy plans for the establishment of a GKMA infrastructure coordination taskforce with bi-annual coordination meeting on water/environment/climate change resilience

2.5 Impact

2.5.1 On advocacy (ownership)

*Ownership... on
sanitation / and
RRR issues*

In Kampala, a strong advocacy for better FSM and sanitation services has been promoted by the RRR project and by GIZ in general through several projects (RUWASS, ENWASS, S4M and RRR).

Also SSP has been taken into consideration for the drafting of the Kampala Sanitation Strategy, the guidelines and standards.

However, the authorities' ownership seems to be more on the sanitation issues than on RRR. There is no "new ownership" or twist in paradigm in favour of RRR.

The Project has definitely increased the relevant Peruvian institutional ownership of RRR concerns, e.g. through the 2 years commitment in the public-private workgroup.

2.5.2 On increasing investment, economy, jobs

*Viability vs
formalization*

The first outcome of the project is "*the implementation of economically viable business models increased scale and viability of productive reuse*" [4].

This outcome does not define whether the "increased scale" applies to both formal and informal businesses. Both categories could contain "economically viable businesses".

In Kampala, this outcomes was translated in output planning to reach the objective "*through the introduction of [...] formalization of [...] private faecal sludge collection and treatment operators*" [61].

Formality and its benefits should be part of the objective, *at least as a long term perspective*, also to make monitoring and regulation easier. As a consequence, during project appraisal for the 2nd phase, formalization appeared as a natural and "by default" criteria for reaching the objective.

In the case of FSM, yes formalization came together with an increase of jobs (and positive impact, see §2.5.3 below). This was mainly due to the introduction of the call centre and a centralized management of clients' demands.

Based on their daily work experience, many informal businesses in developing countries still perceive formalization as an obstacle instead of an opportunity. It appears that formalization progress may require a comprehensive set of accompanying measures to attract businesses so that they identify the benefits of being formalized (and accept to pay also direct taxes).

In Lima, formalization has not been a primary concern and the Project did not impact job creation significantly. Out of 5 ventures implemented, only the venture with the strongest demand, effluent reuse, is profitable to

²⁰ Some years ago, Rwanda has implemented a program to reduce deforestation by offering biogas plants to farmers for alternative cooking energy production.



support CAPEX and continues today. Compost production in markets can be profitable and create jobs, but 2 projects were abandoned for political reasons that have not been disclosed.

One can assume that under the organizational constraints (coordinating more than a dozen of bureaucratic institutions and coping with complicated authorization/negotiation procedures and political changes), the Project duration was simply too short to implement all ideas and subprojects. It takes more time than 2 years to generate a lasting economic impact.

Financial barriers All investors will look for an adequate IRR compared to other investment alternatives with similar risk pattern. As demonstrated in the initial Business Model analysis, RRR projects may offer a good return - but with more risks and not necessarily as much investments as in other sectors.

RRR businesses mentioned the lack of access to financial resources (e.g. seed capital, business angels, early stage funds, etc.) as a major obstacle to improve productivity, scale up and sustain the venture.

When it comes to private sector participation in fragile economic contexts - adequate financial incentives or facilities are a crucial input to increase the competitiveness and attraction of RRR project for SME private investors. This applies to new businesses, as well as to RRR activities in existing businesses.

2.5.3 On the environment

Huge improvements in FSM During this project phase FSM in Kampala has generally improved registering an increment in the percentage of safely managed FS from 54% in 2016 to 61% in 2019 [61].

Sludge volume has been increased, much more sludge coming to the treatment plant. This is a massive improvement, as much more sludge is treated (and to some extent reused).

In Lima, the direct impact of the RRR projects on the environment has been limited, but one can expect a larger impact through the indirect impact of the new legal framework in the longer run.

Updated FSM framework The RRR project provided the opportunity to update and upgrade very important framework documentation: guidelines, standards and the Kampala Sanitation Strategy.

Due to their long-term engagement, the actors active in sanitation in Kampala are well known and they tend to work together. These outputs have been shared relatively fast among the actors. They also address the demand for framing the activity of all actors. The outputs are of quality: they are expected to contribute to a better environment.

Health protection through SSP It was noted that municipal planning documents considered environmental impacts - but not necessarily health impacts at scale.

As such the integration of SSP into the planning process is considered a significant step forward.

The positive impact of SSP should also be regarded in the context of the present pandemic: the protection measures promoted by SSP may play a role in reducing contamination among businesses and their clients.

Although there is at this stage no solid evidence linking SSP and a positive impact on the pandemic²¹, it is worth mentioning that SSP was incorporated into the KCCA behaviour change campaign called "Weyonje" [60].

²¹ Several initiatives are being taken at international level in order to merge hygiene efforts with measures against the virus.



KCCA partnered with NWSC to promote handwashing, hygiene and disinfection in the usually crowded public spaces such as markets and transport stations in Kampala's central business district and the city suburbs.

The handwashing facilities also had a public health message inscribed on them to emphasise the importance of proper hygiene. This NWSC attributes to the inhouse SSP that originates from the SSP guidelines and from their interaction with WHO experts that provided useful information when the SSP was being popularized in the country.

2.6 Approach

2.6.1 Suitability of the approach to the challenges

Objectives achieved

A comparison between the objective set in the appraisal documents and the achievements listed in the final report shows that **most objectives were reached**.

In terms of reaching the objectives, approach, activities and dedication of all actors can be considered very adequate.

The "linear" approach is still in charge

Although the growing trend today goes for a new "circular approach", the existing legal, normative and regulatory framework is still oriented toward a "linear" approach based on "*take-make-use-dispose*".

This linear approach has been driving the development of the sanitation sector for decades. All efforts produced, in all countries including Uganda and Peru, have been focusing on meeting "*discharge* standards for protecting the environment"²².

Today the sanitation sector is still based on this linear "end of pipe" approach. Over the last decades, huge efforts have been produced (and resources spent) to draft laws, decrees, regulations, directives, guidelines, standards based on a "linear / end of pipe" criteria.

As a consequence, all training materials, courses, technical schools have been following this legal framework. Huge investments have been made to create schools and run training courses in order to reach and implement a linear approach.

Many students have made huge sacrifices in order to become professionals keen to implement the approach they have learned. This is even more notable in countries like Uganda, where professional training often represents a significant financial efforts for students and their families.

Last but not least, projects have been implemented based on this linear approach (technical standards implemented by professionals trained on a linear approach). That is actually why some services are working anyway, meeting discharge standards and protecting the environment and the health of the population²³.

As for any investment, these actors (still) want to get a return on their investment. Their resistance to change has good and legitimate reasons. It is not so much because of lack of awareness or lack of goodwill; the momentum created by so much investment into the linear approach, supported by the existing legal framework, is very strong.

However, there is good news too:

²² This statement is not limited to Peru and Uganda. It also applies to industrialized countries, including Switzerland.

²³ As an example, wastewater treatment plants designed primarily for wastewater reuse are a minority, if not exceptions.



- Although they have been trained on a linear approach, most actors in Lima and Kampala perfectly understand the rationale for a circular economy. They expressed goodwill and support. This was also perceived among other participants in the RRR project.
- Most financing entities (including SDC, SECO, World Bank and more) acknowledge the importance of a necessary paradigm shift and now invest in it in their worldwide activities.
- The private and academic sectors follow (or precede) the trend and lead the innovations in the RRR sector.

Today, the big question is not anymore "why" but "how" to shift the paradigm from a linear to a circular economy in countries like Peru and Uganda.

Outputs promote RRR in the existing linear approach

In Kampala, the RRR project looks more like an effort to *introduce RRR into the linear approach* than to directly emphasize a circular economy approach. It does not set RRR as an objective, but instead as a very important, but nevertheless *transversal*, theme.

As an example, recycling is indeed part of the sanitation strategies and the standards and guidelines for FSM in Kampala. But the main objective remains a safe collection and treatment of the sludge. The second objective is to support the public sector in its effort for regulation.

These outputs are of good quality and most useful for the sector. But they are only a beginning and only partially supporting the paradigm shift. Setting RRR as the main objective in these documents would have led to different outputs.

It will take time until a new generation of professionals and decision makers are *trained on a circular approach* and participate in the update of existing framework and approaches. In that respect the RRR Project is very important and useful: its contribution to train the local actors is significant and should be pursued.

2.6.2 Success factors and failures

Success factors

- Working with partners installed for a long time on site, and enjoying a trustful relationship with local partners (like GIZ in Kampala). This increases the efficiency of the project (do more with less budget and time).
- Sanitation is usually a sector shared among a large number of institutions, creating sometimes gaps in responsibility. This is also the case in Uganda and Peru. To fill up this gap, the actors in both Uganda and Lima have made important coordination efforts. The main institutions (such as KCCA) acted as lead and coordination centre in Kampala. Also the National Sanitation Working Group offers a useful platform at the national level.

Similar commitment happened in Lima and the cooperation and coordination among actors translates into quite an efficient implementation of the RRR Project.

- The balance between macro, meso and micro activities in Kampala and Lima provided the opportunity for a consistent contribution to start the development of RRR in the city.

Failures

- The objectives of the project have been reached but no action has been taken in order to install capacity for providing support to future businesses. In Kampala, the MUBS offers training courses to businesses. Although most challenging, the Project did not provide a more comprehensive business development concept including financial conditions for small RRR businesses.



- Compared to the efforts deployed during the 1st phase of the project to draft Business Models, the achievements on "*safe and financially sustainable RRR businesses*" are relatively limited. In Uganda 10 private operators in FSM and 5 other pilot RRR businesses were involved – and only 3 show profitability today. There was no real concept for scaling up the participation of the private sector without external support. The same applies for Lima.
- As said above, although the RRR project contributes to the development of RRR in town, opportunities have been lost to "boost the case" a little further, taking advantage of the complementary financing possibilities (by SDC and BMZ).

In Uganda, the RRR project has come to consolidate existing projects (RUWASS, UNWASS) that are effective, efficient and have a good impact – but apply a "business as usual" approach in sanitation. This approach does indeed include reuse components (as many sanitation projects do), but as secondary objectives.

- Although it may sound severe to call it a "failure", the downside of sharing the financing with other donors (BMZ) and working with strong partners (GIZ) is a lack of visibility for SDC and the Swiss contribution. The RRR project in Uganda is usually called a "GIZ project" and not so much an "SDC project" – despite efforts deployed by GIZ to add the SDC logo on (most) deliverables.

2.6.3 Lessons learned

In Kampala, most of the objectives set have been achieved. To the evaluators' opinion this is due to several factors:

*A reasonable
logical framework
with reachable
objectives*

- *a reasonable logical framework* with reachable objectives.

On the other hand, this logical framework seems unambitious in comparison with the preparatory work done during the 1st phase. The investment in the 1st phase (with multiple business plans studied in detail) could have theoretically been extended on more businesses in Kampala and Lima. But the project chose to set less ambitious objectives instead.

The methodology applied (shortlisting and then train businesses) did not provide the opportunity for a scale up within the Project duration, very/too short for such an ambitious endeavour.

The achievement of this second phase must be outlined as a "reasonable, useful and completed project".

*Only one
implementing
agency*

- The mobilization of only one implementing agency (GIZ) with strong local ties and experience in the sanitation sector.

The evaluation of the 1st phase had concluded on the importance of having one single coordinator for the project.

Since this 2nd phase was split into two separate projects (one in Kampala and one in Lima) GIZ acted as sole project manager and coordinator for the Kampala component and played a leading role together with its partners KCCA, MWE and others.

In Lima, the execution of the Project did not benefit from a similar project management unity and required much more coordination efforts.



Trust • Committed counterparts

KCCA, MWE, NWSC, WFP, MUBS have shown commitment in the implementation of the RRR project. This was possible because of the trust existing between the implementing agency and these actors. This trust was developed over many years and many projects. The same conclusion applies to the Lima Project component.

Although this should not come as a surprise, trust remains a major factor for success.

In Lima, the Project also achieved most of the objectives, in particular the development of the legal and institutional framework.

The weak point remains the low integration level of the private sector for the implementation of the RRR principles on the ground. However, one can expect an easier future access for the private sector to RRR activities through the indirect impact of the new legal framework being already in the reform and approval process.

Cope with the legal framework

Globally, the RRR project in Kampala coped with the existing legal framework, the progress made on the complementary regulatory framework guidelines did not enter in conflict with the existing legal framework.

Private sector requires a specific approach

Although its objective has been more ambitious at the start of the 1st phase, the 2nd phase in Kampala was implemented as a relatively public sanitation project.

A wider and increasing participation of the private sector would have required another methodology.

3. RECOMMENDATIONS FOR FUTURE PROJECTS

3.1 To SDC

The leverage effect of financial approaches

The evaluation has shown that this conventional approach for sanitation projects may not be the most effective one if an increased *impact* in the RRR business sector approach is sought.

Other methodological approaches should be investigated, in particular based on the *leverage of existing capacities* - including both in the formal and informal sectors.

It is very difficult for local authorities to take these kinds of initiatives, because they have to work within their institutional mandates and with the existing legal framework and with limited access to finance and experience.

Other initiatives around the world aiming at a leverage of existing capacities are very promising, such as initiatives working on the financial facilities in order to boost existing businesses and attract new businesses.

As a reminder, businesses both in the 1st and the 2nd phase of the project expressed an expectation of financial support.

Introducing financing facilities to existing and starting businesses may have a greater impact.

It is recommended that SDC investigate such methodologies, e.g. combining comprehensive business development concepts with ways for supporting local financial institutions (e.g. with risk covered by a guarantee) so that they can offer attractive conditions to local businesses.

Promote a shift in paradigm

One of the main outcomes of this evaluation is that RRR initiatives were promoted within a "linear" economy and along with conventional implementation approaches. The implemented project is a successful sanitation project - but not so much a "Circular Economy" project.



Reuse has been part of the sanitation projects for the last 50 years: this is not new. If the objective was to "rethink sanitation systems" then the project should have been drafted setting circular economy as a main objective.

As an example, designing a wastewater treatment plant according to the conventional "linear" way will set meeting the discharge standards as a main objective. RRR may offer options to reach this objective or be implemented in parallel - but is not the key objective in a CE perspective.

Designing the same wastewater treatment plant with a circular economy objective would mean to design the plant to reuse the water (and the by-products), and at the same time, protect the environment.

It is difficult for local authorities to initiate this kind of shift because they have limited resources and have to dedicate them to priorities (such as water supply). And it might be the role and the added value of a cooperation agency like SDC to trigger such a process for a new resource management concept.

Of course, the objective of the project cannot be to complete the paradigm shift. But it could have provided the opportunity "to put the sector more on track" in a new direction towards a "circular economy".

For future projects aiming at promoting the circular economy it is recommended to set objectives and identify indicators that will "make a change in the approach" and put the sector on track.

Apply progress indicators

When interviewed, all partners expressed that working in the RRR sector is a process that takes much more time than that has been allocated to the project.

While this kind of statement is often expressed by evaluated partners, it is nevertheless worth paying attention to it.

It is therefore recommended to pay more attention to the indicators of the project so that's they express the *progress* of the results and not only the *completion* of achievements.

As an example: a progress indicator is "3 new businesses are formalized *per year*" while a completion indicator is "3 businesses are formalized".

3.2 To implementing partners

Extend the inclusion of partners

Sanitation is a sector that involves all kinds of actors ranging from public to private businesses, NGOs and more. By experience, a participatory approach that would give a voice to all actors in a sanitation project is always a challenge in terms of coordination and resource allocation.

In Kampala the implementing agency has been an active player of the local sector for a long time: they know most of the actors and have been working with them. They are also part of several exchange platforms, such as the National Sanitation Working Group.

This participation in the local network is critical and eases the collaboration. GIZ has been applying a participatory approach with its direct partners (KCCA, NWSC, MWE, WfP).

There is however room for the inclusion of additional partners.

It is recommended to extend the mix of organizations and institutions to be included in the loop and offered a voice if the objective is to increase the participation of private sector.

Several initiatives are existing in Kampala that can be approached. As an example the "Kajjansi Junction" initiative²⁴. It might well be the case that GIZ and other partners in Kampala are already aware of this kind of

²⁴ https://www.youtube.com/watch?v=1ScN6oNsIP1&ab_channel=KajjansiJunctionProgramme



initiatives. They are worth investigating to identify the potential exchange of information and experiences.

Bottom up approach

Several businesses expressed the wish to be consulted so that the training courses can then be calibrated according to their needs.

Part of this effort was done during the 1st phase of the project, but may not be transferred, or not to the required extent, in order to meet the businesses' expectation (which may rank financial support as a priority).

In the same context, the businesses also expressed that they were expecting financial support out of the project. See recommendation for local authorities on incentives below.

3.3 To local authorities

Formalization vs legalization

The evaluation of the 1st phase of the project recommended that public authorities should be supported in order to formalize businesses: *"formality should be part of the objective, at least as a long term perspective, in order to make monitoring and regulation easier"* [2].

The objective of formalization was however not defined. Nor the time frame of "long term perspective".

The experience of the 2nd phase of the project shows that attention should be paid to the process and the definition of formalization.

The majority of people working in the informal sector in Kampala are *poor*, rather than evading taxation. Nearly all (97%) of the firms in the informal sector employ 5 or fewer people and 59% are self-employed. The majority of informal firms will hardly be able to grow and generate jobs for others [55].

On the other hand, World Bank studies call for city governments to transition *"From Regulators to Enablers"* that have a positive relationship with the informal sector. For instance they call for city governments to invest in infrastructure that protects informal sector enterprises' access to customers (such as vending stations near transport stops, public markets and serviced working premises) [54].

There might be an opportunity to work with the informal sector, which contributes already hugely to the RRR activities in Kampala and Lima.

The city of Barcelona (Spain) offers a comprehensive model including technical coaching, feasibility assessment, tailor-made training, incubation programs and financing opportunities aimed at small informal businesses. The approach helps to facilitate the transformation of business ideas into successful enterprises, promotes entrepreneurship and increases employment opportunities in the city.

It is therefore recommended to investigate these opportunities of recognizing the informal sector until it reaches sufficient size/capacity for being formalized.

Recognizing the informal sector may also provide the opportunity to support it, offering safety material like gloves or boots, checking on their vaccination status. This may be very efficient - and much appreciated.

Support to the informal sector will make them feel more comfortable and confident to join a formalization process at a later stage.

Financial incentives

RRR is a sector by its own, following its own rules. Unlike many other businesses, *RRR services provide common benefits to the community*. They contribute to achieving commitments taken by authorities (which will get political credit).

In parallel, financial incentives attract private sector and many times makes a critical difference in the financial analysis of the project.



In Switzerland projects aiming at reducing domestic consumption of electricity have access to financial incentives (for solar panels, isolated windows and so on). Switzerland has efficient public utilities and a very competitive environment for SME; nevertheless, RRR projects are subsidized because they contribute to the common good, which is, at the end of the day, a public responsibility. The support provided by the Swiss government is limited to the subsidy. The rest is taken care off by the private sector directly with the households and industries.

It is therefore recommended to consider financial incentives for future or RRR businesses, initiatives, projects, innovation.

This relates also with the legal framework and the institutional setup: it might be necessary to consider building up the capacity of local authorities and adapting the legal framework in order to open the door for financial incentives.

These incentives can be of several forms of tax exemption, soft loans, green credit lines and so on. Some of such incentives can be offered in partnership with specialized private institutions, e.g. local banks and microcredit institutions that can play a more active role in the support of RRR initiatives.

In many countries some commercial banks have decided to open "green credit lines" with lower interest in order to specifically attract RRR businesses - and boost the sector and develop a new business line. They have a commercial interest in doing that and can access "green money" from the international financial system.

3.4 To businesses

Apply SSP

SSP has been promoted in Lima and Kampala. Today many actors in these cities are aware of these plans and of the benefits that they provide.

It is therefore recommended that businesses apply the SSP in order to increase their security at work and protect the health of their clients, partners and staff.

Using measures promoted by SSP may also provide some benefits for the businesses in terms of visibility for clients, partners or financing institutions (e.g. to prepare for microcredits, banks credits or external aid).

Participate in professional associations

In Kampala, the pit emptiers have already joined one of the two professional associations (GAU and TAUEL). Joining a professional association brings several advantages to the members.

It is recommended to the businesses that they not only joined the professional Association but also take an active part in the development of these associations.

By playing an active part in the association the business can expect that the association will speak on its behalf when negotiating with clients and regulatory authorities.

Promote certification "labels"

Considering the effort of being formalized, there might be an opportunity for businesses to get a *certification* that will help them show the efforts they have produced in order to reach a higher quality service and comply with the regulation in charge.

In many countries certification has taken the form of "labels". In the case of businesses in Lima and Kampala there might be a case for labels integrating efforts towards the environment and towards health.

Label's importance and impact should however not be overrated. It is a relatively little step. But also a cheap and easy one.



Institutions and businesses that were able to apply SSP either in their business plan or in their strategy should be given the opportunity to showcase such efforts.

It is therefore recommended that the associations take the lead together with the local authorities in order to identify the best way to draft and deliver labels to the businesses.

Extend the range of representation

The project helped consolidate the two professional associations for the pit emptiers in Kampala.

There are however other professional associations in town.

For instance the Uganda Chamber of Commerce for Small and Medium Enterprises²⁵. There is no mention of this chamber in the deliverables of the project and there might be other similar initiatives in Uganda

It is recommended that businesses investigate these existing initiatives and take advantage of any opportunity that may arise and that will enhance their visibility and credibility.

Being part of an association may have a cost for the businesses. So it will also be recommended to select the organizations that best match the business's profile.

Look for partnerships

Partnerships may be very useful for small businesses marketing innovative services. Sharing experience and capacities with similar businesses, either in the same country or at an international level, may provide huge benefits to the small businesses. It may be necessary to develop the market together before developing the individual businesses.

It is therefore recommended that businesses seek partnerships with similar organizations or businesses and share their experience.

This sharing of experience can take several forms ranging from an informal exchange of information to patents promoted with royalties. This will depend on the kind of business: it may be more efficient for innovative businesses like the briquettes than for pit emptiers.

An example is actually undertaken in Kampala: The Kajjansi Junction program²⁶. The program brings together 30 Dutch entrepreneurs with 30 Ugandan waste entrepreneurs to realize circular and inclusive business solutions. Skilled young entrepreneurs that have the ability and skills to engage into and/or service the new sustainable business solutions, linked to an urban development strategy of the metropole. This sharing of experience can be promoted and supported by implementing agencies or local authorities in the frame of a project.

Fairs

Last but not least it is recommended that businesses participate in fairs and events that will showcase their services and products.

These events can be of different forms ranging from local fairs to international web based platforms or international conferences.

It is worth mentioning that the ongoing pandemic may have an impact on the kind of platform that will be used. Today high-attended conferences are just not possible anymore and this promotes web-based solutions as well as applications or digital solutions.

So the media will depend on the actual sanitary situation. Nevertheless businesses need to gain visibility and recognition since their contribution to environmental health is significant.

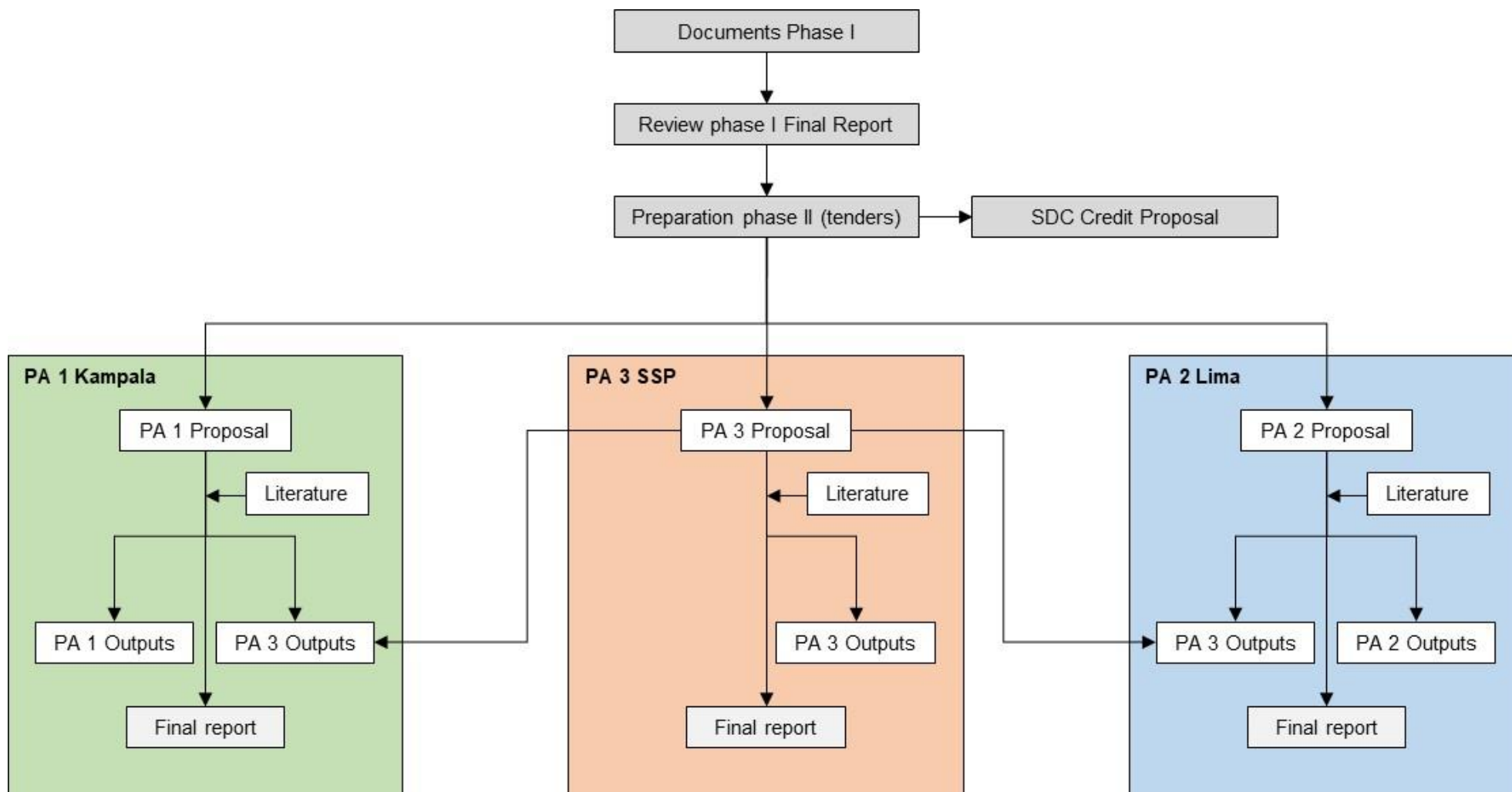
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Appendix

Appendix 1 Map of documentation





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- [111] A3.1_InformeAceites_IntermediarioSssss
- [112] A3.1_InformeAguas_Intermediario
- [113] 74. A3.1_InformeCompost_Intermediario
- [114] A3.1_lista de asistencia 1ra reunion ARL (002)
- [115] A3.1_Matriz_Aceites residuales_20170620
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- [117] A3.1_Matriz_Lodos de PTAR_20170620
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- [120] O3.7 SSP Seminar Participation List, WORD, abril 2018

2.5 RRR implementation plan selection

- [121] A1.1_Evaluación 24 de Enero 2017 (?) Estado de Emprendimientos, Excel
- [122] A2.4_RESUMEN RESULTADOS EVALUACION PLANES DE IMPLEMENTACION
- [123] A2.5_Formato de Evaluacion para Seleccion de Planes de implementacion (V1)

2.6 Continuous coaching

- [124] A4.1_Compilation of RRR Coaching Cases; Planta de tratamiento de aguas residuales Tingo María para riego de áreas verdes y Estudio para la producción de Biodiesel a partir De Aceites Comestibles Residuales (ACR), y Mercado de Flores Santa Rosa y Concesionaria Línea Amarilla (LAMSAC), WORD
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- [127] A3.1_Informe 3 de la Primera Reunion de Aguas Residuales y Lodos, nov 2017, pdf
- [128] A3.1_Informe de reunión #2 de Aguas residuales y lodos, fev. 2018, pdf
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- [135] A3.1_Informe_Presentación_Balance_Grupo_PP-RRR_220218
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Appendix 3 Check list for meetings

In Kampala, Uganda:

Outcomes / Outputs	Outcome 1		Output 1			Output 2		Output 3	Output 4		
Description	The formalization process of the private FS C&T and RRR operators has been brought forward by KCCA.		The legal and institutional framework for private sector engagement in Kampala's sanitation sector is strengthened.			Safe and financially sustainable RRR businesses		SSP is put into practice by businesses and the knowledge of the responsible authorities of SSP is strengthened.	The experience of setting up pilot RRR business models and improving FSM in Kampala is disseminated and made available both at a national and international level, to support scaling up and policy dialogue		
Activities & Indicators	KCCA has entered into an MoU with the two private FS operator associations.	20 private emptying operators have acquired necessary licenses to be working formally in Kampala and to be acknowledged by the regulatory authority KCCA	A Sanitation Strategy for Kampala including short-, mid- to long- term goals with a specific focus on on-site-sanitation has been developed and approved by KCCA	City-wide infrastructure / minimum standards for sanitation facilities that can be emptied have been adopted by KCCA and are being enforced	Guideline established by KCCA for safe FSM and reuse of FS	At least two RRR pilots reusing and recovering resources from faecal sludge and/or complementary waste stream have been implemented in Kampala and are functioning safely and financially profitable for a period of at least a year.	The viability and safety of including faecal sludge as a waste source into the products of at least three RRR pilots has been tested through internationally recognized laboratory services	SSP champions have been created for the city of Kampala through identification and training of trainers	A communication and dissemination strategy has been developed	The lessons learned and successes of the project have been compiled into a document using the pilot RRR business models case studies	External actors and stakeholders, at the national and international level, know about the RRR Project phase II through exchange fora
Key indicators	Baseline value: 0 Target value: 1 Achieved: 1 MoU between KCCA and the 2 new Private Emptying Associations (GAU and	Baseline value: 0 Target value: 20 Achieved: 10 private operator companies have been approved to operate in Kampala. 18	Baseline value: No sanitation strategy for Kampala Target value: Development of a sanitation strategy for Kampala Achieved: A	Baseline value: No city-wide minimum standards Target value: City-wide minimum standards adopted and enforced by KCCA	Baseline value: 0 health guideline for safe FSM and reuse of FS Target value: 1 guideline developed and approved by	Baseline value: 0 in Kampala Target value: 2 in Kampala Achieved: 5 businesses were functioning safely, but only 3 showed profitably (SEACO, Best of Waste and	Baseline value: 0 Target value: 3 Achieved: 5 businesses (SEACO, Best of Waste, Chamuka Briquettes, KEG and LUCHACOS)	Baseline value: 1 Target value: 5 SSP Champions created for the city of Kampala Achieved: 5 SSP focal persons and 5 SSP	Baseline value: 0 Target value: 1 Achieved: 1 communication and dissemination strategy developed	Baseline value: 0 Target: 2 lesson learned and successes project document using RRR business case studies Achieved: 2 a publication on	Baseline value: 0 Target value: 2 External actors and stakeholders, at the national and international level, know



Outcomes / Outputs		Outcome 1		Output 1			Output 2		Output 3	Output 4		
		TAOUEL) has been developed in close cooperation by the three parties and awaiting KCCA signature. It will be valid for 3 years	other companies have applied for KCCA approval and awaiting inspection and approval.	Sanitation Strategy for Kampala including short-, mid- to long-term goals with a specific focus on onsite-sanitation has been developed and approved by KCCA	Achieved: City-wide minimum standards adopted and enforced by KCCA through the provisions of the new city-law; the sewage and FSM Ordinance	KCCA Achieved: 1 guideline revised and in use by KCCA	WfP Chamuka (Briquettes Company)		assistant focal persons identified and trained in SSP in each of the 5 divisions of Kampala		Circular economy for Sanitation – RRR Business development Experiences in Uganda and cewas final report on RRR businesses and DEFASTs Financial analysis	about the RRR Project phase II through exchange fora i.e. RRR II Kick-off meeting, SuSanA, FSM5 international conference 2019, AfWA conference
Actors met		GIZ	GIZ	GIZ	GIZ	GIZ	GIZ	GIZ	GIZ	GIZ	GIZ	GIZ
		KCCA	KCCA	KCCA	KCCA	KCCA	WfP	WfP	Champions	KCCA	KCCA	KCCA
		GAU	GAU	NWSC	NWSC	Consultants	SEACO	SEACO	MoH	MWE	MWE	MWE
		TAUEL	TAUEL	Pr. Charles Niwagaba	MWE	WHO	Best of Waste	Best of Waste	WHO Uganda	NWSC	NWSC	NWSC
		Private operators	Private operators		MoH	MoH	WfP Chamuka	WfP Chamuka			CEWAS	
						MWE		KEG				
								LUCHACO				
Relevance												
	Of RRR projects in general	Do the actors think that RRR has a global future?	Do the actors think that RRR has a global future?	Does the strategy take into consideration the international RRR / circular economy trend? Does the strategy feed this international trend?	Does the new standards contribute to RRR development? If yes, in what way?	Does the guidelines contribute to RRR development? If yes, in what way?	Do the businesses think that RRR has a global future?	Do the businesses believe that the approach is relevant? Safe enough? Any recommendation they have?	How do these champions regard the link between SSP and RRR?	Does the strategy advocate for RRR generally?	Does this publication identify the relevance of RRR in general?	Any feedback from the fora about the relevance of RRR projects?



Outcomes / Outputs		Outcome 1		Output 1			Output 2		Output 3	Output 4		
	Of this RRR project in particular (approach)	<i>Do the actors believe that this specific RRR project is relevant? Well designed? Opportune?</i>	How relevant was licensing to creating an enabling environment for private sector actors?	<i>Was this strategy needed by the sector? By KCCA? By the donors? Did anyone asked for it?</i>	<i>Do these standards catalyse private sector investment in RRR businesses? How?</i>	<i>To what extent did the development of these guidelines increase the understanding of the income creation opportunities in RRR?</i>	Do the businesses believe that the approach is relevant? Safe enough? Any recommendation they have?	<i>Do the businesses believe that the approach is relevant? Safe enough? Any recommendation they have?</i>	<i>Do the actors believe that this specific RRR project is relevant? Well designed? Opportune?</i>	<i>Does the communication on strategy address a real concern of the public? What public?</i>	<i>Is this publication useful for the planning process of RRR in Kampala or other cities?</i>	Any feedback from the fora about the relevance of the formalization approach? 8. If project support were provided to informal businesses (providing this is possible and legal), would the impact be greater in terms of (i) number of businesses (ii) number of jobs (iii) environmental health?
	Of the businesses	<i>To what extent have the local and / or national authorities been involved in the development of these business models? Do the actors believe that the approach based on private sector participation is relevant?</i>	How relevant is the project for resource recovery and reuse, for income generation, for opportunities of replication? What is the impact of formalization on the businesses? Does it increase their burden, or provide support, or relief to them?	<i>Does the strategy address the needs of the businesses? Is formalization part of the strategy?</i>	<i>Do these standards increase encourage investment in improved sanitation facilities? Do these standards translate to improved Safe FS containment?</i>	<i>What development and other effects are the developments and business partnerships created aspiring to?</i>	<i>Did this translate into increased demand for waste bi-products by these RRR pilots?</i>	<i>Did this translate into increased demand for waste bi-products by these RRR pilots?</i>	<i>To what extent have the local and / or national authorities been involved in the development of SSP and the champions? of these business models? Do the actors believe that the approach based on private sector participation is relevant?</i>	<i>What is the potential for uptake and wider dissemination in terms of institutional framework and public sector engagement?</i>	<i>Is this publication useful for the planning process of future businesses?</i>	
	Of the SSP	<i>Do the actors believe that SSP is</i>	<i>Is SSP part of the licence requirement</i>	<i>Does the strategy included the SSP?</i>	<i>Do the standards consider</i>	<i>How relevant are these guidelines</i>	<i>How relevant are these guidelines and how was the</i>	<i>How relevant are these guidelines and how was</i>	<i>Is the SSP Manual a useful tool to facilitate</i>	<i>Is SSP part of the communication strategy?</i>	<i>Is this publication useful for the</i>	<i>Was SSP part of the fora?</i>



Outcomes / Outputs		Outcome 1		Output 1		Output 2		Output 3	Output 4			
		<i>relevant for Uganda? For this RRR sector? For the private sector?</i>	<i>? How did the businesses feel about it? What does KCCA think about it: useful or not for licencing?</i>		<i>SSP? And vice-versa?</i>	<i>and how was the SSP considered in their development?</i>	<i>SSP considered in their development?</i>	<i>the SSP considered in their development ?</i>	<i>the implementation of the WHO guidelines on safe waste reuse?</i>		<i>implementation of SSP ?</i>	
Effectiveness												
	Objectives vs results: To what extent are the projects' and partial actions' objectives and results achieved / expected to be achieved ?	<i>What about KCCA's signature?</i>	<i>To what extent have the entrepreneurs been formalised in their RRR activities and business lines ?</i>	<i>Were objectives met? % of execution?</i>	<i>is the new FSM ordinance in force? Applied by the licenced operators? By masons? Evidence?</i>	<i>is the new FSM guideline in force? Applied by the licenced operators? By masons? Evidence?</i>	<i>What happened to the non-profitable businesses? For the other 3, does profitability translate into solidity and sustainability ? What made them profitable? Were these business informal before? What made them want to formalize?</i>	<i>Has there been an improved supply of waste and sanitation services ?</i>	<i>Indicators? Are these champions active? What are their terms of reference? Whom do they report to?</i>	<i>Indicators? What is the quality of the strategy (objectives, methodology)? Importance of the audience? Any feedback (evidence)?</i>	<i>Was the publication effectively published and distributed, or only available on line?</i>	<i>List of results?</i>
	Training	<i>Were the participants trained? Would KCCA be able to sign another agreement with other actors, without GIZ support?</i>	<i>Does licencing come together with training of the operators? Are the KCCA operators trained for licencing</i>	<i>To what extent did the development of this strategy improve on the quality of the trainings? Was training on</i>	<i>Does the distribution of the new standard come with training of the operators, masons, shops?</i>	<i>Does the distribution of the new guideline come with training of the operators, masons, shops?</i>	<i>How much did training contribute to the profitability?</i>	<i>Indicators?</i>	<i>Are the educational and training materials appropriate and addressing the most important issues of RRR as well as public</i>	<i>In which way is / has been the training effective and leading to larger adoption rates ?</i>	<i>Is the publication being used for training purposes?</i>	<i>Can the outputs of the fora be used for training purposes?</i>



Outcomes / Outputs		Outcome 1		Output 1			Output 2		Output 3	Output 4		
			operators? Any training program for future KCCA officers?	how to apply the strategy implemented?					health concerns ?			
	Policy Dialog	Has the policy dialogue with the respective relevant institutions been conducive to adaptations and/or reforms for better integration of RRR businesses ?	How do other institutions regard licencing? Formalization? Any institution requiring licenced operators?	What institution did participate to the strategy? Whom is it owned by? Applied by? What about the sanitation working group?	What institution did participate to the standards? Whom is it owned by? Applied by? What about the sanitation working group?	What institution did participate to the guideline? Whom is it owned by? Applied by? What about the sanitation working group?	Were the results of these experiences shared with KCCA? NEMA? Have they been taken into consideration for the strategy?	Were the results of these experiences shared with KCCA? NEMA? Have they been taken into consideration for the strategy?	Do the champions advocate at policy dialog level (for instance in the sanitation working group)?	What are the experiences with this Manual in the selected pilot cities of Kampala and Lima in terms of local adaptation and appropriation ?	Is the publication endorsed by the public authorities and the RRR stakeholders ?	Can the outputs of the fora be used for advocacy and policy dialog purposes?
	For the sectors	Are the associations ' members aware of the MoU? How do they rate it?	Are the licenced operators offering better service? At some cost like informal operators?	Any link with social / health / economy sectors?	Did the health / economy sectors acknowledge the importance of the new ordinance? Did they participate to the elaboration ?	Did the health / economy sectors acknowledge the importance of the new guideline? Did they participate to the elaboration ?	Did this experience influence / inspired other businesses? Do the businesses belong to other networks?	Did this experience influence / inspired other businesses? Do the businesses belong to other networks?	Do they champions also contribute to other sectors, such as health centres?	What has been the level of uptake of the tools and manuals on the ground ?	Is the publication endorsed by the public authorities and the RRR stakeholders ?	Can the outputs of the fora be used for other sectors (health)?
Efficiency												
	Organization	Who take care of this component? Was a	How were operators informed about the process?	Tendering process for drafting the strategy?	Who drafted the new standards? Internal	Who drafted the new guideline? Internal	Who take care of this component? Was a working group set?	Who take care of this component? Was a	Who take care of this component? Was a	Who take care of this component? Was a	Who take care of this component? Was a	Who take care of this component? Was a



Outcomes / Outputs		Outcome 1		Output 1			Output 2		Output 3	Output 4		
		<i>working group set?</i>	<i>The GIZ support? The KCCA conditions?</i>		<i>KCCA or external consultant? Tendered?</i>	<i>KCCA or external consultant? Tendered?</i>		<i>working group set?</i>	<i>working group set?</i>	<i>working group set?</i>	<i>working group set?</i>	<i>working group set?</i>
	Resource efficiency	UGX?	UGX?	UGX? How many men-months? Schedule?	UGX?	UGX?	UGX?	UGX?	UGX?	UGX?		UGX?
	Information	<i>Is the MoU available online? To the participants? To the emptiers?</i>	<i>As a customer, how do I know if the operator is licenced or not? Do I care, any advantage provided to the customer? Same cost like informal service?</i>	<i>Was the strategy disseminated? National sanitation Committee?</i>	<i>Are the new standards available on line? To the sector actors?</i>	<i>Are the new guideline available on line? To the sector actors?</i>	<i>is this information available on-line? Do the businesses make publicity? Do they mention GIZ and/or SDC?</i>	<i>is this information available on-line? Do the businesses make publicity? Do they mention GIZ and/or SDC?</i>	<i>is this information available on-line? Do the businesses make publicity? Do they mention GIZ and/or SDC?</i>	<i>is this information available on-line? Do the businesses make publicity? Do they mention GIZ and/or SDC?</i>	<i>is this information available on-line? Do the businesses make publicity? Do they mention GIZ and/or SDC?</i>	<i>is this information available on-line? Do the businesses make publicity? Do they mention GIZ and/or SDC?</i>
	Participants	<i>Staff & resources mobilized by the actors? Quality of the organization? Minutes of meetings?</i>	<i>Staff & resources mobilized by the actors? Quality of the organization? Minutes of meetings?</i>	<i>Staff & resources mobilized by the actors? Quality of the organization? Minutes of meetings?</i>	<i>Staff & resources mobilized by the actors? Quality of the organization? Minutes of meetings?</i>	<i>Staff & resources mobilized by the actors? Quality of the organization? Minutes of meetings?</i>	<i>Staff & resources mobilized by the actors? Quality of the organization? Minutes of meetings?</i>	<i>Staff & resources mobilized by the actors? Quality of the organization? Minutes of meetings?</i>	<i>Staff & resources mobilized by the actors? Quality of the organization? Minutes of meetings?</i>	<i>Staff & resources mobilized by the actors? Quality of the organization? Minutes of meetings?</i>	<i>Staff & resources mobilized by the actors? Quality of the organization? Minutes of meetings?</i>	<i>Staff & resources mobilized by the actors? Quality of the organization? Minutes of meetings?</i>
Sustainability												
	Of the business models		What is the emptiers' motivation for getting a licence and formalization?	<i>Does the strategy identified the sustainability challenges, and suggests</i>	Do the standards support the businesses? If yes in what way?	Do the guideline support the businesses? If yes in what way?	What are the sustainability indicators applied?	What are the sustainability indicators applied?	<i>Do the champions charge for their SSP services? Are they full staff employees?</i>	<i>Any incentive for businesses in the communication strategy?</i>	<i>Does the publication identify the mechanisms of sustainability of the business models?</i>	<i>To what extent are the different stakeholders of the RRR project (financially, personnel-wise and in</i>



Outcomes / Outputs		Outcome 1		Output 1		Output 2		Output 3	Output 4			
	of the framework conditions	What about after 3 years?	Did KCCA adapt their licence and/or processes after formalizing 10 operators?	solutions for sustainability?	Do the standards facilitate the regulation? Are they reflected in any other legal document?	Do the guideline facilitate the regulation? Is it reflected in any other legal document?	Is the public sector involved? If yes, how? Regulating?	Is the public sector involved? If yes, how? Regulating?	Do the champions share their experience with the policy actors, for capitalization and use in policy documents?	Is the role of public sector reflected in the communication strategy? If yes, in what terms?	Does the publication identify the mechanisms of sustainability of the framework conditions?	terms of organisation) capable and prepared to maintain the positive effects of the RRR project without support in the long term?
	Sustainable use of natural resources	Any formal commitments from associations (and members) on protecting natural resources?	What about regulation of discharge location?		Do the new standards take RRR in consideration? If yes how? What the "RRR added value" provided by the ordinance?	Do the new guideline take RRR in consideration? If yes how? What the "RRR added value" provided by the ordinance?	What is the environmental impact of these businesses?	What is the environmental impact of these businesses?	What is the environmental impact of these SSP champions?	is the (positive) impact on environment reflected in the communication strategy?	Does the publication identify the mechanisms of sustainability of the natural resources?	
	Contribution to fighting climate change	Any formal commitments from associations (and members) on mitigating climate change?	Any biogas generation?		What is the contribution of the new standards to the mitigation of climate change?	What is the contribution of the new guideline to the mitigation of climate change?	What is the environmental impact of these businesses?	What is the environmental impact of these businesses?	What is the environmental impact of these SSP champions?	is the (positive) impact on environment reflected in the communication strategy?	Does the publication identify the mechanisms of sustainability of the natural resources?	
	Training	To what extent did the RRR project strengthen local ownership of the project's objectives	Is KCCA trained for delivering licences? Do they now have an installer procedure? Templates? Can they do		Is KCCA trained for drafting strategies? Do they now have an installer procedure? Templates? Can they	Are the emptiers trained for the new standards ?	Are the emptiers trained for the new guideline?	How much did training contribute to the profitability?	How much did training contribute to the viability?	How sustainable are these trainings in their integration in the existing national framework ?	Who designed / implemented the strategy? Are they trained so they can run a strategy without GIZ support?	Does the publication make recommendation for training?



Outcomes / Outputs		Outcome 1		Output 1			Output 2		Output 3	Output 4		
		<i>and leadership in the private sector?</i>	<i>this without GIZ support?</i>	<i>do this without GIZ support?</i>								
Impact												
	On advocacy (ownership)	<i>How has the dialogue with the private and public sector been institutionalised? What has been the level of impact?</i>	<i>Why does KCCA want to formalize operators? Are they legally bound to do so? If not, why?</i>	<i>Is the strategy formally owned (and applied) by KCCA? By other institutions? Did it help to raise more money? Or attract new members?</i>	<i>Are the standards formally owned (and applied) by KCCA? By other institutions?</i>	<i>Are the guideline formally owned (and applied) by KCCA? By other institutions?</i>	<i>Is the public sector involved? If yes, how? Regulating?</i>	<i>Is the public sector involved? If yes, how? Regulating?</i>	<i>Do the champions share their experience with the policy actors, for capitalization and use in policy documents?</i>	<i>Did the strategy increase ownership? Indicators? Evidence?</i>	<i>Was this publication shared with sector actors? Public authorities? Operators?</i>	<i>What is the level of ownership and impact of these activities by the concerned authorities – at local, city, national levels?</i>
	On increasing investment, economy, jobs	<i>Does the MoU have an impact on jobs? At emptiers? Association? KCCA?</i>	<i>Does the licences have an impact on jobs? At emptiers? KCCA?</i>	<i>Does the strategy identify the opportunity and approach for raising jobs?</i>	<i>Do the standards imply increase of jobs? For instance for regulation? Or for more masons? Or new material to be provided (by shops)?</i>	<i>Do the guideline imply increase of jobs? For instance for regulation? Or for more masons? Or new material to be provided (by shops)?</i>	<i>To what extent have (according to the most recent information and the most recent assessments) appropriate overriding effects regarding RRR been achieved so far? What has the RRR project contributed to use of safe reuse of FS waste so far and what is it still contributing to?</i>		<i>Is there a need for more SSP champions?</i>	<i>Apart of the staff involved in the campaign itself, any other opportunity for job creation?</i>	<i>Is the publication useful for future businesses?</i>	<i>Is economy part of the fora, is there evidence, added value?</i>
	On the environment	<i>Did the MoU effectively prevent wild discharge of sludge? Any evidence?</i>	<i>Did the licences & regulation effectively prevent wild discharge of sludge? Any evidence?</i>	<i>Does the strategy identify the opportunity and approach for protecting the</i>	<i>What are the difference (positive) impacts on environment (no more wild</i>	<i>What are the difference (positive) impacts on environment (no more wild</i>	<i>What is the environmental impact of these businesses?</i>	<i>What is the environmental impact of these businesses?</i>	<i>What is the environmental impact of these SSP champions?</i>	<i>What is the environmental impact of the strategy?</i>	<i>Does the publication identify the impact on the environment?</i>	<i>Did any forum identify the contribution of RRR projects on the environment</i>



Outcomes / Outputs		Outcome 1		Output 1			Output 2		Output 3	Output 4		
				environmen t?	disposal) and health?	disposal) and health?						? On climate change?
	On the transversal themes (gender, climate change,...)	What is the gender distribution among association? KCCA trained staff?	What is the gender distribution among operators? KCCA trained staff?	Does the strategy identify the opportunity and approach for promoting gender balance?	Are the new standards sensitive to gender? Minorities? Any evidence?	Are the new guidelines sensitive to gender? Minorities? Any evidence?	Was the conception of the RRR project differentiated by target groups and was a poverty analysis available?	Was the conception of the RRR project differentiated by target groups and was a poverty analysis available?	What actual or expectable positive and negative effects are foreseeable on the environment ?	Do women and men equally benefit from the project? Were gender issues taken into consideration in the project and programme planning phase and the implementation?	Is the publication sensitive to gender? Minorities? Any evidence?	Are genders / minorities represented in the fora?
	On scaling up	Does the MoU have an impact on collected sludge?	Does the licences have an impact on collected sludge?	Does the strategy identify the opportunity and approach for scaling up?	Are standards applicable nationwide? Rural, small towns, urban? Industries?	Is the guideline applicable nationwide? Rural, small towns, urban? Industries?	What is the level of engagement of the financial sector for RRR business development ? Has there been increased investment opportunities ?	What is the level of engagement of the financial sector for RRR business development ? Has there been increased investment opportunities ?	Are the SSP champions active nationwide? Rural, small towns, urban? Industries?	Did the strategy increase participation? Indicators? Evidence?	Does the publication apply to rural areas? Small town? Out of Uganda?	What are the possible risks following the completion of the project?
Approach												



Outcomes / Outputs		Outcome 1		Output 1			Output 2		Output 3	Output 4		
	Success factors and failures	<i>is the MoU good? Why not signed yet? What is missing?</i>	<i>Are the licences good? What is missing for signing with remaining 18 companies?</i>	<i>Are other strategies in the country in application ? What about the Hygiene strategy (ECOPSIS ? Any link?</i>	<i>Was the city law an opportunity for including the standards? Did it contribute to success? What if this law was not available?</i>	<i>Did KCCA start this guideline with GIZ or was it a former initiative?</i>	<i>What is the critical factor for success, from a business's point of view?</i>	<i>What is the critical factor for success, from a business's point of view?</i>	<i>How are candidates chosen? How do SSP champions make a living?</i>	<i>What is the added value provided by the strategy?</i>	Summary of lessons learned from the publication	<i>What have been the main challenges and success for implementation and wider uptake of RRR approaches, from both the public and the private sector ?</i>
	Lessons learned	<i>Don't set signature as an objective? (out of GIZ reach)?</i>	?	<i>Did the strategy change the figure?</i>	?	?	?	?	?	?	?	?
	Recommendations	?	?	?	?	?	?	?	?	?	?	?
	Suitability of the approach to the challenges	?	?	?	?	?	?	?	?	?	?	<i>Suitability of the approach to the challenges (low sanitation provision, high health hazards, low economic opportunities) – with the additional lens of circular economy and PPP engagement</i>



In Lima, Peru:

Tema	Preguntas	A quién?
Overall Goal: (marco lógico) La implementación de los modelos de negocio de recuperación y reutilización seguro y los Planes de Seguridad del Saneamiento en Lima y otras ciudades de Perú promueve la recuperación de costes en el sector de saneamiento, genera oportunidades de sustento para los empresarios y aumenta la seguridad alimentaria de las poblaciones objetivo, salvaguardando al mismo tiempo la salud pública y el medio ambiente	Quantos RRR Business models and Sanitation Safety Plans have been adopted and implemented in private and public sector and supported by which donor agencies?	Vários Seecon, TPH
Outcome 1 (Marco lógico) Se estimula el desarrollo de negocios entre los actores locales a través de la promoción adecuada de los resultados de la fase 1 RRR relevantes para el contexto de Lima	Fue Realizado? 200 actores locales conocen los resultados de la fase 1 RRR, incluyendo 42 municipios del distrito, 6 Ministerios, 5 Instituciones y Asociaciones y 5 organizaciones internacionales. Por otra parte, se ha contactado e informado a 50 participantes (organizaciones) de interés	Seleção: Líder: MINAM (Ministry of Environment), ANA (Autoridad Nacional del Agua) ProInversión (Agencia de promoción de la inversión privada), MEF (Ministerio de Economía y Finanzas) Metropolitan Municipality of Lima and 42 district Municipalities with RRR potential, SEDAPAL GEA IPES
	Porque somente poucos (5) negócios realizados comparado com lista longa?	Seecon
	Fue Realizado? Los actores locales proporcionan los conocimientos y la información de base para la adaptación de los resultados de la fase 1 RRR?	Vários
Output 1 Business models (energy, water, compost) adapted to local conditions and available in Spanish	Available? Evaluation criteria to select existing business models? ? Modification process descriptions?	Bibliography, Seecon
Output 2 Stakeholder map	Stakeholder map available with identification of active stakeholders?	Bibliography, Seecon



Tema	Preguntas	A quién?
Outcome 2 (marco lógico) Los empresarios locales implementan modelos de negocio viables económicamente para la reutilización productiva y segura de agua, nutrientes, materia orgánica y energía procedentes de los flujos de desechos	Quantos planos de negócios foram realizados assim? 2-3 planos de negócio (<u>incluyendo</u> un componente PSS verificado) desarrollados e implementados. 1-2 planos de acción elaborados y aplicados para mejorar y expandir los negocios <u>existentes</u> de una manera segura y económicamente sostenible Quantos negócios existentes foram incluídos? 1-2 planos de acción elaborados y aplicados para mejorar y expandir los negocios existentes de una manera segura y económicamente sostenible Have the <u>Sanitation Safety Plans</u> be integrated as a mandatory component of all sanitation business models?	Vários
	Dito – mesma pergunta,	Seecon
Output 3 Have participants been enabled to access suitable financing mechanisms	3-4 financing mechanisms identified and documented ? List of suitable and interested financial institutions (public and commercial)? Requirements identified for utilizing the financing mechanisms?	Varios
Output 4 Implementation plans (business plans and action plans) for local RRR businesses established	- 50 interesting participants (organizations) have been contacted? - 6-10 participating organizations in RRR business development training (e.g., technologies, safety, regulations, markets, financial aspects)? Selection of participants considers gender equality? - Selected 1-2 existing local businesses (private and public organizations) have been coached to formulate actions plans to improve and/or extent the RRR activities? - Selected 2-3 participants of the entrepreneurial program are coached to develop a RRR business plan - Business and all action plans include a financing approach and a verified SSP?	Varios
Output 5 SSP training for local RRR businesses and local authorities realized?	- 6-10 representatives from the participating organizations in RRR business development training invited + participated in 3-day SSP training workshop? - 6-10 representatives from various local authorities invited + participated in 3-day SSP training workshop? - 3-day SSP training workshop implemented ?	Varios



Tema	Preguntas	A quién?
Outcome 3 (marco lógico) Un entorno propicio para las actividades RRR y el PSS se introduce en la política y el marco regulatorio en Perú y crea conciencia entre las autoridades y el sector privado	Foi estabelecida uma Plataforma para el diálogo político e ainda existe que ainda funciona? RRR continua ser promovido e integrado nas atividades de saneamento pelas autoridades? Have the frame conditions for investments in the RRR sector become more conducive for private sector involvement and created <u>incentives for the formalization of businesses</u> in resource recovery as well as reuse? What incentives and how successful?	Setor público (seleção) GEA IPES
	Mesma pergunta	Seecon
Output 6 Public-private working group on RRR activities and SSP established ?	- 3-5 working group meetings - up to 3 policy briefs and/or recommendation letters? - 1 policy brief, specifically addressing the institutionalization of SSP in Peru, developed?	Varios
Output 7 Continuous institutional support of municipalities (city authorities) ?	Verificar se 3-5 municipalities in the metropolitan area have been continuously supported	Varios
Outcome 4 (marco lógico): La difusión de los resultados de la fase 2 entre los actores relevantes en Lima conduce a un aumento del tratamiento de residuos de un modo más seguro y financieramente en Lima e otras regiões do Perú	Foi realizada uma difusão entre os atores relevantes em Lima e outras cidades peruanas? É possível constatar/verificar os resultados ou impactos? Existem casos de aumento do tratamento de resíduos e descrições de casos?	Setor público (seleção) GEA IPES
	O consórcio conhece e/ou mediu o impacto?	Seecon
Output 8 SSP training for local RRR businesses and local authorities realized?	Empirical evidences collected and summarized: 3-5 business and action plans documented and verified according to safety assessment	Varios
Output 9 Concept for scale-up	Concept note discussed with SDC to prioritize cities and regions in Peru for scaling-up	Varios
Output 10 Dissemination of RRR phase 2 results	- Integration of RRR phase 2 results into ongoing local activities (e.g., SDC Lima, PAHO (Panamerican Health Organization)) - RRR website (e.g., key information on each business model for energy, water, compost) - Continuous exchange with WHO about SSP training and implementation in the frame of RRR phase 2 in Lima - Development of brief case studies on SSP implementation in RRR business planning to be used by WHO for SSP dissemination	Varios

Outras perguntas



Tema	Preguntas	A quién?
Business model	To what extent have the entrepreneurs been formalized in their RRR activities and business lines ? How sustainable is their situation ? What is the potential for large-scale dissemination and uptake via private investors and entrepreneurs?	
Authorities	To what extent have the local and / or national authorities been involved in the development of these business models ? What is the potential for uptake and wider dissemination in terms of institutional framework and public sector engagement ?	
Sanitation Safety Plan SSP	Is the SSP Manual a useful tool to facilitate the implementation of the WHO guidelines on safe waste reuse? What are the experiences with this Manual in the selected pilot cities of Kampala and Lima in terms of local adaptation and appropriation ?	
Training	Are the educational and training materials appropriate and addressing the most important issues of RRR as well as public health concerns ? How sustainable are these trainings in their integration in the existing national framework ?	
Challenges, successes	What have been the main challenges and success for implementation and wider uptake of RRR approaches, from both the public and the private sector ? Are these models technically, environmentally, economically and socially sound ?	
Relevance	o of the approach : design, (training) method, location, duration, organizational setup, target group, monitoring and evaluation, and its communication / dissemination, o of the business models : for resource recovery and reuse, for income generation, for opportunities of replication o of the safe sanitation component : for improved health conditions, for safe development of the RRR activities	
Effectiveness	o To what extent are the projects' and partial actions' objectives and results achieved / expected to be achieved ? o In which way is / has been the training effective and leading to larger adoption rates ? o Has the policy dialogue with the respective relevant institutions been conducive to adaptations and/or reforms for better integration of RRR businesses ?	
Efficiency	o Did the approach used by the implementers assure effective and efficient utilization of human and financial resources ?	
Sustainability	o of the intervention line designs : how have the notions of sustainability been integrated and applied to the partial actions ? at the level of the development of the business models, of the trainings, of the institutional engagement ? o What has been the level of uptake of the tools and manuals on the ground ? o Have the benefits / outcomes of the project been able to last beyond the closure of the project ? How many of the business models developed are still operating after closure of the partial action in Lima ? o How has the dialogue with the private and public sector been institutionalized ? What has been the level of impact ?	



Tema	Preguntas	A quién?
	o What is the level of engagement of the financial sector for RRR business development ? Has there been increased investment opportunities ?	
Impact	- o In what way is this project contributing to resource recovery and reuse ? Has there been an improved supply of waste and sanitation services ? - o What is the level of ownership and impact of these activities by the concerned authorities – at local, city, national levels ? - o Has the project contributed to increased / sustained job opportunities and / or income generation ?	
Approach	- o Success factors and failures – lessons learned & recommendations - o Suitability of the approach to the challenges (low sanitation provision, high health hazards, low economic opportunities) – with the additional lens of circular economy and PPP engagement	



Appendix 4 Meetings' minutes

<i>Date</i>	<i>Partner</i>	<i>Media²⁷</i>	<i>ECOPSIS</i>	<i>Main points addressed</i>
19 June 2020	WHO Geneva Mrs. Kate MEDLICOTT	WhatsApp	Derko	- Kate has been the coordinator for the RRR 2nd phase. Her boss (Gordon) has been supervising. Kate has an assistant (Mr. Poisson?). - There is a final report (submitted 11 May 2020). Kate drafted the final report herself. - Kate sends the final report now to DK - The SSP project for this 2nd phase has long been over for WHO ("more than one year ago"). - Part of the SSP project (~ 20%) is implemented by the partners in the countries (GIZ in Kampala, EAWAG in Lima). But the major part of the budget (~ 80%) is executed by WHO directly, at global level. Activities have been developed in India and Jordan for example. - WHO HQ hires individual consultants or through contracts with partner organizations (EAWAG, STPH, etc...). The main consultants hired were for example Leonellha, Mirko, etc... - WHO has submitted a new request for funding to the SDC for a "3rd phase" - but in fact is no longer part of the RRR project. This request is on the DDC desktop. - This new request is based on the experiences of the RRR project, and therefore may contain important and useful information for our review. - Kate will be on vacation July 9-19, 2020.
23 June 2020	GIZ Kampala Mr. Fred NUWAGABA Technical Advisor Mrs. Faithful ATUSINGUZA Project Manager	Skype	Derko	- The GIZ coordinators shared information about the history and the development of the project. They draw the attention on how the RRR project was articulated with other on-going GIZ assignments in Kampala (UNWASS). - The project was extended to 2018, and the last activities were run in May 2020. Today the project is completed, and the final report submitted. The participants drew the attention of the Consultant on the present situation: the airport is still closed, as well as businesses and schools. - The GIZ office is expecting for the situation to normalize in order to start the activities with the other projects again

²⁷ Recording always counted with the previous permission of the participants. Recordings remain confidential.



Date	Partner	Media ²⁷	ECOPSIS	Main points addressed
19 October 2020	GIZ Kampala Mr. Fred NUWAGABA Technical Advisor	Skype (recorded)	Edward & Derko	- There are no additional data in GIZ main offices in Eschborn. - As far as detailed financial information is concerned, check with Martina or Christian. - Actors may be contacted easily for this evaluation. No need to formalize by letter. - They are many unformal RRR businesses in town. In order to survive, they work under extreme efficiency and optimization of energy and materials. Does formalization increase/reduce efficiency? - How much benefits/ challenges does formalization provide to the RRR businesses? In terms of health, visibility, recognition, training, access to financial support, etc...? - KCCA & NEMA target wild discharge. Safer. KCCA has enforced together with NEMA. Ordinance. Formalization is a carrot. Because emptying provides business more volume within Kampala. Because regulation is enforced against non-licenced. - Call centre: KCCA able to link with the private players. Being approved. - We are dealing with a partner (KCCA) that has to do on the formal legal way. - Set the framework conditions first. Supply chain needed. - Some work with small businesses (carbonization, briquettes). With that kind of business, you have to be patient. Longer.
21 October 2020	GIZ Kampala Mrs. Faithful ATUSINGUZA Project Manager	Skype (recorded)	Edward & Derko	- Faithful has left GIZ end of July 2020, because of program closure. - Operation tools have been transferred in the "output" list? There was a table of activity, attached to the MoU with KCCA.
	MWE Mrs. Trinah KYOMUGISHA Senior Environmental Health Officer Urban	Skype (recorded)	Edward & Derko	- Innovation in the sector, legalizing private sector, who was dumping with certification or control from NEMA. That is a plus for the sector. - The MWE as keen with policies formulation - A team from MWE actively participated in providing input and guidance for the Guideline established by KCCA for safe FSM and reuse of FS - RRR in the guidelines? The standards? <i>MWE only supported and guided during this project, but was not directly involved since most of it was focused on Kampala city which is KCCA's docket.</i> - SSP linked with guidelines and standards? Only on O&M. So that operators are protected.



Date	Partner	Media ²⁷	ECOPSIS	Main points addressed
22 October 2020	GIZ Eschborn Mrs. Martina ERLENMAIER Finance Manager	MS Team (recorded)	Derko	- SDC contribution was first allocated as a contribution to the RUWASS project (2015-2017). Then to the ENWASS project (2017-2020). From an SDC perspective, it is one and only project (RRR II). But from a GIZ perspective, it is 2 different projects (RUWASS and ENWASS), with 2 different contracts. - The SDC and BMZ were joined into shared common baskets for each project. The results are thus shared as well. - As a consequence, there is no financial statement per activity and donor. For instance the statement in the final report <i>"From the BMZ funding stream, national guidelines on planning, design, construction, operation and maintenance and monitoring of FS treatment plants have been developed in collaboration with MWE"</i> does not apply. The BMZ money was not allocated to specific activities, same for the SDC money. - There is no consolidated financial statement of the consolidated budget (BMZ+SDC) per activity. - Martina will send (by e-mail) the signed contracts between SDC and GIZ to Derko.
26 October 2020	WFP Cate NIMANYA Country Director Yvonne LUGALI Sanitation Engineer Brenda ACHIRO Program Manager Loretta NAKAYIMA M&E Officer	MS Team (recorded)	Edward & Derko	- WFP wasn't part of phase I. Came in phase II. GIZ had a long list of businesses, already identified, already supported. WFP undertook due diligence, visited 8 businesses. Selected 3 businesses to go on the next phase. 2 businesses were dropped out (not ready for market). - Phase I provided good material. However, WFP knows the market in Kampala and would have been able to identify the businesses without the phase I. WFP had been in touch with businesses before. - WFP supports with equipment after making sure they have sufficient capacity to absorb, in particular covering OPEX. - The project support ended in December 2019. Businesses have remained in touch with FWP, support has continued, staff time was allocated (not using SDC funds). - Covid period not favourable for these businesses. - Formalization is important if they want to get bigger. To be recognized. Otherwise they miss the support, from GIZ and Ministry of Energy. - For the pit emptiers: important to be licenced. City authorities protect the users of this service. They have to do a good job. End spilling. Scale up the businesses. Increase their market. - So many small informal businesses in Uganda. Reuse also at village level. Women group. Youth group. There is a group in all neighbourhood. KCCA would know more. KCCA is investing in medium size businesses.



Date	Partner	Media ²⁷	ECOPSIS	Main points addressed
				- Businesses are small. We look at CAPEX and OPEX. For small businesses, they are not able to recover CAPEX. But if they are able to cover OPEX after one or two years. And if they grow. Thus, the indicators for sustainability are (i) covering OPEX and (ii) growing. - Recommendations? <i>Give it enough time</i>. For instance, licencing takes a lot of time. 2 regulatory (KCCA, NEMA) authorities. Support for licencing still on-going. Because it is a new kind of businesses. - Emptiers, none of them have defaulted. They have to pay back loans. So far so good. - How to move from a "social enterprise" to a "business" that makes money. - Bureau of Standards. Is also important. Should be on-board as well. - Businesses required a need assessment before support. "What they think they need".
27 October 2020	KCCA Eng. Allan NKURUNZIZA KCCA BMGF/ CIWAS Project	Skype (recorded)	Edward & Derko	- Both formal and informal businesses are required. The separation line between businesses that need to be formalized (or not) is thin, and moving. - The Kampala Sanitation Improvement & Financing Strategy, "hot from the press" (April 2020) with GIZ support. We had the Sanitation Master Plan (but was only looking on infrastructure, sewerage, FSTP). - Sludge volume has been increased, much more sludge coming to the FSTP. Massive improvement. - The Kampala Sanitation Improvement & Financing Strategy is used, in priority by KCCA, used for the KCCA 5-years development strategy. - Covid has limited diffusion of the strategy. - RRR support very helpful for coordination of partners. 2 meetings/year for Kampala FSM sanitation development. KCCA, MWE, NEMA, MoH. - Sanitation Working Group? One of the institutionalized fora/fora for national sanitation development. The meetings are specific to Kampala. - KCCA has shared their experience. Knowledge management with national and international. Sister cities in Uganda. A lot going on exchanges with secondary towns. At international level RRR has support with Lusaka City (2019). Even now during Covid Lusaka (by distance) on value chain. - WEDC conference 2018. Led by KCCA. Sharing KCCA experience on RRR. - FSM 5 conference in Cape Town (ZA). Sharing KCCA experience on RRR.



Date	Partner	Media ²⁷	ECOPSIS	Main points addressed
				- Stockholm WWW. - Key areas RRR: Capacity building, private sector promotion. Maintained in the Strategy document. SSP was a useful and important output. 5 divisions of Kampala developed / integrated the SSP. - How would you recommend another capital to implement RRR? <i>"People would think hardware is much required, but it is not so. But to sustain the hardware you need a very good institutional framework (who is responsible for what), capacity building is crucial. Also, you need to work at city level. Recognition that the public utility cannot do it all. Provide opportunity to other actors. Once you solve all that, you still need hardware, but it comes after. It takes time, be prepared for that".</i>
27 October 2020	MUBS Prof Vincent Bagire Senior Lecturer MUBS	Skype (recorded)	Edward & Derko	2 levels of intervention: - lecturer MUBS, agreement GIZ & MUBS, team leader for RRR training. Provide training support to business, so that they integrate RRR in their business models. 2 approaches: (i) start-ups as RRR (ii) other business, with elements of RRR. 2016-2017. MUBS hired by CEWAS - individual contractor by CEWAS. FSM. 2018 - early 2019. Working together with FWP for CEWAS. Sustainable models with FSM. - Continued at individual level (still businesses called). Not as institutional MUBS training. - RRR businesses had problems with lockdown. - GIZ identified ~24 businesses during phase I. All of them were trained by MUBS. They were invited by advertising then registered by the college of engineering. "First fishing". Their motivation was "mixed". Taking the opportunity for transport, lunch and so on. - Then the businesses competed for next level. They drafted their business plans and submitted it. Only 6 businesses were selected. Motivation was "too full". Highly motivated. Committed. - Some businesses had already started, trained by other organizations. Not purely start up, but new businesses. - Same businesses supported by WFP, in particular on the FSM. WFP involvement was more on technical processes. - Businesses provided a feedback. They appreciate the support in corporate development. But they had more expectations (financial support, equipment). - Subsidies? Being discussed at academic and business models. They need it. KCCA and other government agencies have hired private companies to provide services (waste collection).



Date	Partner	Media ²⁷	ECOPSIS	Main points addressed
				- Recommendations? - These companies may need some <i>financial support</i> in addition of training. They were expecting financial support. So that they can acquire equipment. - Technical issues has not been a problem. We worked with NWSC (who process the FS). The companies need a lot of technical support. - Once business are running, the market will follow (people will buy briquettes). - Financial support should be sustainable and independent from donors / IFC.
30 October 2020	FICHTNER (FWT) Frédéric KOEHL Project Manager sanitation project in Kampala	Skype (recorded)	Derko	- Worked on many projects (mainly water supply, but including wastewater + sludge): - KfW+EU: Lubigi (WWTP + FSTP) 400m3/d of sludge. In 2010-2015. Frédéric did the training. - In parallel FS on the slums (condominial) - then detailed design (2017). KfW+UE+BAD+AFD: Nalukolongo FSTP, tender on-going (French & Chinese companies). - Lubigi: biggest FSTP in the world. Works. Farmers fight to get the dried (~40% dry) and hygienized sludge. Goes fast. Partner with NWSC. - On Lubigi: - Early 2010 initiative from US universities via Linda Strande (Eawag). With Ashley in Kenya, did not work. Went to Uganda (better conditions). W2E projects. Dried sludge to 90%, sold to cement. Did never work at Lubigi. Too much risk? Needed to increase mechanical dewatering for 90% dry. - Swiss "Bioburn" Florian Strudel tested pellets (~30% dry sludge). Pilot no followed up. Issue with financial sustainability? - WFP briquettes. Deal with NWSC (easier between Ugandan partners than internationals?). - At Nalukolongo foresees solar drying for agriculture. NWSC preferred 90% with mechanical dewatering. Needs polymer: complicated/sustainability? - Last year FWT some estimate calculations on the specific prices (€ / kWh) of the briquettes. FWT also had to work on RRR costs / prices via cement plant (for the project of the 2nd large sludge treatment plant in Nalukolongo Kampala), but that was in 2016/17 and Frédéric doesn't remember exactly what that was produced.



Date	Partner	Media ²⁷	ECOPSIS	Main points addressed
				- Lacks market assessment for sludge? - FWT also worked on CO₂ emissions (comparison with recovery in agriculture; sludge recovered for their energy can no longer be recovered in agriculture and synthetic fertilizers must be imported from Asia). - FWT is in favour of solutions that work (agriculture). - Pit emptiers: critical size of market made it possible for them to influence the decision, negotiate with KCCA and WSC. Also, the call centre made it interesting for the emptiers to be formalized, to access an increased market. - Formalization requires a <i>liberal policy</i>. If not, the regulation authorities may not be offering the best conditions for formalization. - Better operation conditions should be offered to the operators. - Formalization should come after (i) interest of all parties to work together. The case is emptiers with GUA and TAUEL. If not, formalization remain artificial and not well implemented.
2 November 2020	SEACO Mr. Serugo Partner/ Co-founder SEACO	Phone (recorded)	Edward	- Joined RRR Project through the MUBS partnership - Were already involved in a project renewable energy business incubator at MUK (REBI) - Attended 2 trainings in 2017 in planning, financial management and marketing - FS was introduced for product development but the challenge is optimally carbonating the FS waste. FS briquettes were first market tested through SEACO in partnership with WfP - Had already received trainings in financial management severally before through different projects, the current need is financing. - Attended only 2 trainings On Challenges - SEACO feels that the trainings didn't really create a difference in the company. Promises had been made to provide funding to enable them scaleup Recommendations - Knowledge gaps among the population. Need for more information dissemination - Support to expand to new markets beyond Uganda - Most expectations were not met



<i>Date</i>	<i>Partner</i>	<i>Media²⁷</i>	<i>ECOPSIS</i>	<i>Main points addressed</i>
				• Are still in touch with WfP and share information and receive referrals for their products
2 November 2020	Tokosa (Formerly Chamuka) WfP Mr. Anthony Kasiinga Business Development Manager	Phone (recorded)	Edward	• Chamuka is now Tokosa • Tokosa is a brand name of WfP FS energy research project with an intention of it growing into an independent enterprise • The BDM has only been in office for about a year
2 November 2020	KEG Mr. Ronald Kakumba Co-founder/ Owner	Phone (recorded)	Edward	• KEG was selected by GIZ after responding to a call for entrepreneurs interested in joining the Waste Reuse business in 2017. One of the companies that started as a result of the RRR Project • Operate from a KCCA waste dumping site in Namuwongo free of charge • Registered with URSB as a business and are in the process of getting licenses from KCCA & NEMA • Produce an average of 50 honeycomb briquettes per day • Were given a mechanized briquette making machine but have no access to power at their office premises • GIZ also constructed a briquettes dryer for KEG • KEG insists that the business has a lot of potential to grow, at times there is more demand than they can meet • Have been able to train another entrepreneur in Entebbe whose business is growing rapidly • Need more access to finances and financing options for their business.



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23 June 2020	STPH Mr. Mirko WINKLER	Phone	Marco	- The background and origins of the project were identified, as well as the role of STPH in the development, in particular of the SSP, in continuation of it previous efforts during phase 1. - He believes that the SSP-approach still has an interesting potential, i.e. in the context of the increasing antimicrobial resistance e.g. in Asian countries.	
25 June 2020	EAWAG Dr. Christian ZURBRÜGG	Phone	Marco	- EAWAG's project manager for the 2nd phase of the RRR-project, Dr. Heiko GEBAUER, has left EAWAG in the meantime. - Dr. ZURBRÜGG has been more active during the 1st phase, contributing to the development of the SSP and promoting the reuse of treated effluents in Lima/Peru, a semi-arid area, suffering from continuous, systemic water shortage. - He also pointed out that Container based sanitary solutions are in a difficult position to sustain a profitable business, mainly due to the high cost for small-decentralized sludge treatment operation. - Many of such businesses are grant-funded and supported by social investors, which limits scaling up of independent businesses.	
25 June 2020	CEWAS-Seecon Mrs. Leonilla BARRETO-DILLON	Phone	Marco	- She informed about a somehow difficult organizational set-up and progression of the consortium collaborative management, pointing out that fortunately the collaboration among the local teams has been excellent, despite several Peruvian governmental restructuring during the project phase. - COSUDE Peru participated very actively and supported even a small 3rd phase of the RRR-project with a small funding. - Mr. Simon JONCOURT was hired after the start of the project and eventually joined Seecon where he continues as a permanent project manager. - She confirmed the main interest for the reuse of treated effluents for irrigation purposes, sometimes for sludge as fertilizer in rural/agricultural contexts. - Composting seems to be limited by the fact that there is almost no practice of selective collection of domestic garbage yet in Peru that causes the implementation of a	



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				special separation infrastructure and work-intensive operation with limited added value.	
16 October 2020	UNALM-Lima ROSA MARIA MIGLIO TOLEDO	Skype (recorded)	Gabriela Marco	- Looked for the most viable business models (BM) that are reuse of treated WW and maybe sludge. - For most areas, there was no legal framework in place. Strongest natural partners appeared the municipalities, responsible for public services re water and solid waste. WWTP were reluctant, mainly due to (1) legal concerns (possible claims for contamination of used WW), (2) undefined tariff and (3) majority of WWTP could not comply with WHO standards. In 2018 it was allowed to reuse WW (outorga). - Larger projects appeared, e.g. reuse WW in Arequipa by big mining firm; demand from industries; other projects in the very arid south of Peru. - The RRR project through the public-private working group PPWG created political consciousness, acted as a catalysator among various actors responsible for waste and public services, not used to collaborate. <i>Recommendation</i> UNALM: replicate experience in other Peruvian regions; include financing concerns	- The main limitation for the reuse of sludge was the high costs and the absence of regulation. Regulation was established in 2017. - SEDAPAL showed resistance to entrusting the municipality with the reuse of wastewater due to the legal implications and responsibilities - Sludge reuse requires an incentive program that favours cost reduction in wastewater treatment - Wastewater reuse requires a large investment which excludes small businesses - The main result was the regulations achieved by political advocacy in the public sector
				•	•
20 October 2020	SEECON Leonilla Simon Joncourt	In office (not recorded)	Marco	- Project phases: (1) understanding proposal from phase 1; (2) contact with interested players; (3) setup + implement PPWG. - Phase 2 started with 16 BM, after review – focus on 4 BM (WW, sludge, compost, Oil/biodiesel) - Initial training with 30 persons (16p implementation plan). - Demand from private sector: very small, regulatory barriers, no support for access to financing (only public sources available-complicated) - Most active sectors: Vivienda, municipalities, SEDAPAL (sometimes), MINAM (less). Difficult to coordinate all public players. Problems: regulatory deficiencies; Political changes in Peru; long and complex decision making processes, coordination work..	



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				• SSP: continuation from phase 1; PAHO took over from WHO, wants to continue implementation. • Critical: too many project lines; support private entrepreneurs complicated, no finance component built into the RRR program. • If to redesign RRR today: geographic focus (one municipality + WWTP); project with finance or access to funding to be added; focus on WW. •	
19 November 2020	SEECON Simon Joncourt	phone call	Marco	• Financing: focus on projects mostly with public institutions operating under special financial conditions and with limited access to funds since COVID-19 pandemic and political changes in Peru; • Few private projects with limited profitability; financial institutions showed low interest; • The Project knew about several wastewater reuse projects implemented earlier by SEDAPAL in Lima; SEDAPAL considered a complicated negotiation partner, only one project finalized with Lima municipality. • Focus on informal sector: no focus (in line with ToR that did not require citywide impact)	
20 October 2020	Los Olivos Engo Giancarlos del Carpio Respons. Viveiro + compost	WhatsApp	Gabriela Marco	• The municipality had demand for compost and solid waste management in food markets (that provide 60% of food in Peru; more than 50% of Peru's solid waste is estimated to be organic). • The municipality had a small plant nursery of 2ha for public gardens, but the real participation in the RRR program started with the course on RRR by the program. First plant in Lima Norte; transport with own tricycle from nearby food market; Project duration: 2016 – 2018, then stopped due to missing political support. • Planned results: technical process improvement (done); creation of an association of "compost workers"; certification and sales of compost (not done due to political changes in Peru; no financing; today many workers in quarantine)	• The interest of the small companies was to access financial and non-technical support. The Project focused on technical assistance •



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				- Production area: 800 m2, 3 composting sites (today abandoned/destroyed); main market: municipalities, few private. Today, Peru is importing certified compost from Chile. - Other municipalities were contacted – without response! No other municipality visited the composting project, only engineering students in 2020. No contact with the other RRR composting project – Santa Rosa. - Limitations: little public support (municipality), no compost quality analysis, no financing, no certification/no official standards/normas. - Today government objective: composting at every municipal level; obligation increased interest. - Knowledge lost, no momentum or dissemination (Later, Giancarlos tried to realize a project in Arequipa, but couldn't access necessary land plot).	
21 October 2020	IPES Luis Briceño Naomi Soto Rodríguez Osvaldo	Skype (recorded)	Gabriela Marco Derko	- Assumes the role of the technical secretariat of the Group of Public Private Work RRR, providing technical assistance to consolidate the platform. The Public Working Group-Private RRR Lima is formally institutionalized as key platform for inter-entity coordination necessary to promote Peru's transition to circular economy. (FR) - The program technically accompanies the working subgroups to develop normative proposals in favour of RRR ventures. They will technically accompany the working subgroups to finalize the normative proposals which were commissioned by the PP-RRR Working Group. The working subgroups are: "Wastewater and Wastewater WWTP ", Edible Residual Oils (ACR) and Waste Organic solids. (FR) - Focus on work group PPP, important articulation among stakeholders (among them 16 national public entities, civil society, municipalities, Vivienda = lider) (GEA: <i>administration of program; CARE focus on practical projects.</i>) Last meeting PPP in February 2020; now stopped. - active in project los Olivos: composting (demand + supply analysis), formation of an association, norms/standards, legal framework, analysis interest financial sector. Solid	- The role of IPES was to articulate the actors. - The most successful undertaking was wastewater, because the issue was within the MEF incentive plan to the municipality. - The role of IPES was to promote the ventures, provide technical assistance in business plans. - According to reality, the main task was to advocate for the generation of norms and regulatory framework for the enterprises. - An important achievement was to facilitate sectoral articulation in the public sector, improving the quality of standards for enterprises.



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				organic waste supply sufficient from markets, slaughterhouses, fishing industry, households. Demand mostly from municipalities, less from households (urban gardening; they buy certified Chilean substrates in Shopping Centres) 1st phase: studies, models (16 business models proposed from phase 1 of the RRR program; had to be reduced to 4 feasible lines; 2nd phase: focus on projects (emprendimientos): focus on norms/standards, exchange of experience, promotion 4 lines: reuse treated effluents, ACR (oil), compost, sludge from WWTP. Major difficulty: Missing norms/regulation (for informal sector: too many norms incl. SSP, little public financing, no private interest). No contact with Peruvian program "Formaliza Peru", Ministry of Work. New law on reuse of treated effluents for irrigation in sept. 2020 (= considered positive impact from RRR program) - Municipalities should combine norms with incentives to mobilize private sector and neutralize small commercial opportunities. Access to financing critical. - General ambiance during program: "Yo que gaño?" (What is my Benefit in participating?)	
22 October 2020	MML Pamela Bravo Ortiz, Sofia Bravo Tipián		Gabriela Marco	- Interested in recycled water for irrigation. A composting project was not implemented. - Limited agreements: Nestlé provided 700 m3 for free; SEDAPAL sold water (3x per week, 1 tank truck; municipality will buy one more); intention to use mobile WWTP for emergencies. - Most people involved in PPP program have left, little memory in MML.	✓ The Municipality of Lima showed interest in making a small wastewater treatment plant to use in the irrigation of parks and gardens. But it did not have the financing and had problems with SEDAPAL due to the responsibility of operation and maintenance. ✓ The Municipality of Lima irrigates parks and gardens with drinking water from SEDAPAL, the WWTP would have helped to solve this problem •



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	PUCP SAYDA MUJICA BUENO	Skype (recorded)	Gabriela Marco	- Project ACR Aceites comestibles residuales (Residual edible oils for biodiesel production) Participated with municipality of San Miguel and in PPP work group. MINAM strongly interested. - Except small university funding, the proposal did not obtain access to further financing. - Initial PUCP pilot project: 4 litre production (PEN 8.000 or ~ USD 2.000), implementation actually stopped; further projects: 50 and 16'000 litres - not implemented and no private partner interested (except one firm, but without results). - Demand in Lima considered high, est. ~ 17'000 gallons in San Miguel, 10 millions in Lima. Collection would require an appropriate truck. PUCP believes in the profitability of the project. - Studied also use of incentives – stopped due to COVID-19 19. - Petrol firms are required to use biodiesel, but PUCP's negotiations didn't achieve any tangible result except access to use their laboratory for analysis. - PUCP intends to pursue the project, but has no finance and no land to build bigger plant. PUCP has contacted other municipalities to push legal process (standards), without success until now. Ministry of Production proposes that PUCP shall/must associate with private firms to continue. - Regularization of ACR as input for biodiesel in Peru: still to missing.	✓ The main motivation was given by the municipality and not by the private sector. ✓ The Ministry of the Environment established by rule the extended responsibility of the oil producer, the participation of the private company in the incentive plan would be achieved. ✓ There is a black market that works with residual oil and with which we must compete. ✓ The issue was positioned in the MVCS. ✓ The PUCP itself was able to give a small amount to continue with the project. ✓ There is no legal framework to use residual edible oil as raw material for Biodiesel
23 October 2020	GEA Maricé Salvador Alejos	Skype (recorded)	Gabriela Marco	- Participated as coordinator of the RRR program in Lima in 2016. Focus on 4 areas of reuse business models: effluents, compost, ACR, sludge. Participated in training for business plan elaboration + access to financing sources. (little achievement) - Results achieved: technical + financial manual for private firms (handed over to public stakeholders) and audio-visual	✓ MINAM was able to get DL 1802-2018 that regulated the issue of circular economy and reuse.



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				documentation for dissemination. No information/feedback about effectiveness. GEA remains interested in this topic. • 3 components: (1) political one: work group PPP, focus on reuse of effluents + sludge (active promotor = Vivienda, MINAM); (2) technical assistance for business model implementation, focus on composting and irrigation (MML), mostly with municipalities; later ACR was added (with PUCP). (3) component = ??? • Consider circular economy interesting approach, but requires modification of tools (more hardware, clear legal framework/standards) • Esmeralda: private firm, offers treated effluents to municipalities for irrigation. Not included in the RRR program. • In 2016, legal framework did not allow for reuse, new law towards circular economy was edited in 2018, thanks also to Marcos (ex-GEA) was nominated Vice-minister at MINAM in 2017 (?). • Limitation of the RRR program: financing, political support, technical support for implementation of (private) business models, public bureaucracy and costs for private sector. • Would like to continue, but no funding, e.g. to include business model for construction solid waste. • Profitability of projects considered low, even composting (however we did not hear about any serious financial feasibility study of any business model. GEA thought that larger firms could support SME, did not work. • Lima/Peru: 70% of employees work in informal sector, e.g. also plastic collection + recycling. Business models proposed were too costly to implement by SME (administration, bureaucracy, development costs, funding limitations, standards and enforcement controls. • Recommendations: "scale up", extend project outside Lima over Peru. Include funding facilities, continue motivation of the public sector, develop legal framework, focus on reuse effluents for irrigation, associate municipalities.	



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03 November 2020	CARE Ing. Lourdes Mindreau	Skype (recorded)	Gabriela Marco Derko	- SSP was relevant to motivate the public stakeholders. We don't know if SSP and manual are still used as a tool to support the (private or public) reuse/recycling sector. - Works with sludge related business models (says CARE), no implication in practical project - Program implementation efficiency affected by big organization of consortium - Legal/normative aspects were considered critical and required attention. - Reduction of business models at the beginning of phase 2 (22 or 16 down to 4 BM, adopt a more practical approach) - Private sector, interest overestimated by the RRR program (confusion between need and demand!) - many informal firms or individuals, but without financing support, most initial participants withdrew. Others like cerveza Backus have their own program already and apply self-financed circular economy + CSR principles (https://www.backus.pe/economia-circular). - Achievements: few concrete results, but (1) platform improved connection among (public) stakeholders, although continuation now suspended; (2) advances in adjusting normative framework. (institutions or responsible staff inside should not anymore be able to hide behind lack of regulations). - PPP: rules and practices not yet sufficiently developed. - Recommendations: (1) go for smaller municipalities than Lima. SSP should complement Water safety planning (= priority in Peru's arid areas); (2) Select a lead institution as focal point to lead normative process and select feasible projects	✓ CARE's participation and support was transversal to the four lines of undertakings. ✓ The objective of the project, exceeded the budget and planned time. ✓ The project represents a pioneering initiative, but with atomization of activities. ✓ The entrepreneurs had expectations for non-technical financial support. ✓ The main achievement was the intersectoral work platform that was created from RRR. ✓ Lima was not the best setting for the development of the initiative, the regions represent a better option. ✓ Recommendation, the initiative should have the focal point on the empowerment of the public sector ✓ The initiative should also consider greater dissemination and communication that encourages the participation of the private sector.