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Final Report:

TakaTaka Solutions: Improving Resource Efficiency in Waste Management

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1. Summary

Waste management is a major challenge in Kenya, especially in Nairobi, the rapidly growing capital. Nairobi produces around 2'400 tons of waste every day, of which only 38% is collected and less than 10% recycled. The remaining 62% is littered on illegal dumpsites and next to houses or burned. This is particularly the case for residents living in low-income areas, 2.5 million people, who cannot afford waste collection services. These services are unaffordable because of the costly and inefficient disposal at overfilled dumpsites.

TakaTaka Solutions ('takataka' means waste in Kiswahili), a social enterprise, addresses this challenge through an innovative whole-value-chain model of collection, sorting, recycling and composting. By recycling 95% of collected waste, TakaTaka Solutions is able to provide affordable waste collection services.

Instead of taking the collected waste for disposal, TakaTaka Solutions operates recycling points where the mixed waste is separated into 40 different fractions. Recyclable materials (26%) are sold to recycling industries; organic waste (69%) is taken to TakaTaka Solutions' own composting plant for processing; the residual waste (5%) is disposed. As only 5% waste is disposed, TakaTaka Solutions saves on disposal costs while generating additional income from recyclable and compost sales. This makes it possible to offer green and affordable waste collection services across all income areas for as low as 1 USD per household per month.

Prior to the project start, TakaTaka Solutions had successfully undertaken a proof of concept and, therefore, required support and technical expertise to scale and prepare for subsequent multiplication. This project, 'TakaTaka Solutions: Improving resource efficiency in waste management', provided Swiss expertise to improve both operational resource efficiency as well as build capacity to provide sustainability analyses to clients and the government. Hence, the project took a two-fold approach to improving resource efficiency: Internally at TakaTaka Solutions' operations and externally by providing sustainability analyses.

For the operational resource efficiency component, Swiss Senior Experts (SEC) assessed and provided guidance on the design and processes at the recycling points, improving collection logistics and on the composting production and sales processes. Subsequently, two re-designed recycling points were set up and the logistics and compost recommendations were implemented. For the sustainability analyses component, myclimate Foundation built TakaTaka Solutions' capacity to provide sustainability analyses based on waste production. This helped in building awareness and demand for TakaTaka Solutions' green waste management services amongst Nairobi's waste producers.

Thanks to the successful implementation of the project's objectives, TakaTaka Solutions is now in a position to further roll-out its services, build new recycling points and grow its operations.

2. Starting Point

TakaTaka Solutions had successfully undertaken a proof of concept prior to the project start. TakaTaka Solutions had demonstrated that the core assumptions of TakaTaka Solutions' business model are viable, targeting at:

- Waste collection from 12'000 households (80% low-income)
- Waste collection from 10 corporate customers
- Sorting and recycling 15 tons of waste per day with an average recycling rate of 95%
- Composting 10 tons of organic waste per day
- Operating of two recycling points and one composting plant
- Jobs created for 100 employees

To scale its model further, TakaTaka Solutions required support in three areas. First, processing significantly higher volumes of waste at its recycling points required a high level of process efficiency. Shifting from 15 tons of waste to 40 tons of waste and above on a daily basis required that TakaTaka Solutions' processes, systems and logistics were able to handle these volumes day in and day out without fail. Second, as higher amounts of daily waste input would also lead to higher amounts of organic waste, it was also necessary to improve the operational efficiency at the composting operations, both with regards to processing and sales.

Third, providing reliable sustainability analyses and reports on how TakaTaka Solutions' model profits everyone in the waste value chain would help get the buy-in from commercial customers as well as possible support from county governments.

3. Objectives

- Objective 1: Improving internal operational efficiency for multiplication.
- Objective 2: Build capacity at TakaTaka Solutions with the support of myclimate Foundation to provide sustainability analyses and reports.

Objective 1: Improving internal operational efficiency for multiplication:

- Build two recycling points with improved efficiency in preparation of multiplication phase (staff needed per kg handled, space needed per kg handled).
- Improve production and sales processes for compost in preparation of multiplication phase (train 20 people in better composting processes, reduce production time from 6 to 4 months, find 5 commercial buyers for the compost).
- Increase waste collected and recycled from 15 tons to 40 tons per day.
- Increase customers from 12'000 to 20'000 households (80% low-income).
- Increase corporate customers from 10 to 40.
- Reduce 3'000 tons of CO2 emissions per year
- Increase jobs created from 100 to 180.

Objective 2: Build capacity at TakaTaka Solutions with the support of myclimate Foundation to provide sustainability analyses and reports:

- Build awareness and demand for green waste management services amongst Nairobi's residents and business through knowledge of wider environmental impacts (have 20 new commercial clients regularly using sustainability reports, provide reports to two county governments).
- Support TakaTaka Solutions to use this sustainability reports and data to get government support for the subsequent multiplication phase (train 5 staff members of TakaTaka Solutions to undertake the data collection and generate the reports).

4. Project Review

4.1 Project Implementation

The project was divided into two work packages:

- Work package 1: Improving internal operational efficiency for multiplication
- Work package 2: Sustainability analyses and reports

Work package 1 focused on how operations (recycling points and composting sites) could be made more efficient. This started with on-site visits by two Swiss Senior Experts who then made recommendations for the respective business units. These recommendations were implemented step-by-step

(building of improved recycling points, upgrading of composting processes). This was accompanied by ongoing monitoring and evaluation to be able to quantify the expected efficiency gains.

Work package 2 focused on sustainability analyses and reports provided by TakaTaka Solutions to its corporate clients. This project component started with a review of the previous analyses and was followed by myclimate experts developing an initial draft analyses mechanism and report form. These reports were then tested with TakaTaka Solutions and continually refined. In parallel to this TakaTaka Solutions increased the number of on-site sorting stations (which are a precondition for detailed data collection to feed the reports).

4.2 Achievement of Objectives and Results

All project objectives were achieved.

The identification and subsequent building of the second recycling point was delayed as it took some time to find the land. This was the only milestone that was delayed.

Below is a summary of the achieved targets.

Objective 1: Improving internal operational efficiency for multiplication:

- Two new and improved recycling points built.
- Compost production process improved with introduction of windrow-turning technology → reduction of processing time from 6 months to 4 months. 21 staff were trained in composting and 6 commercial buyers have been identified (mostly horticultural export farms in the Naivasha and Mount Kenya area).
- Increase in waste collected and recycled from 15 tons to 41 tons per day.
- Increase in customers from 12'000 to 21'450 households (80% low-income)
- Increase in corporate customers from 10 to 42.
- Successfully reduced 3'000 tons of CO2e emissions per year
- Increase in jobs created from 100 to 185.

Objective 2: Build capacity at TakaTaka Solutions with the support of myclimate Foundation to provide sustainability analyses and reports:

- Successfully improved recycling reports for TakaTaka Solutions' commercial customers (21 receive recycling reports).
- Starting using the recycling reports to influence political discussions around waste management in Kenya.
- TakaTaka Solutions now has a three staff fully in charge of data management:
    - Two office staff in charge of preparing recycling reports for customers
    - One field staff (rider) going around the onsite locations and checking on data and sorting quality.

4.3 Multiplication / Replication Preparation

TakaTaka Solutions is a for-profit social enterprise. It generates revenues from different income streams:

- Waste collection fees from clients (residential and commercial)
- Sales of recyclable materials to recycling industries
- Sales of compost to farmers

When the project started, TakaTaka Solutions was able to cover its operating costs but not its overhead. This REPIC project was essential to help TakaTaka Solutions achieve the required scale and efficiency improvements in order to attain financial sustainability and profitability. According to the business plan, it was expected that this would be the case at 40 tons of waste per day.

The project was successful in this as TakaTaka Solutions achieved break-even in late 2017 and profitability in early 2018. Moreover, improving TakaTaka Solutions' operational efficiency (both recycling points and composting) will make it possible to further scale operations beyond the current volume of 40 tons per day. Additionally, the improved recycling report will help in attracting further clients as well as government support.

TakaTaka Solutions has successfully piloted taking waste from external waste companies, with currently 3 trucks coming in per week. This will be further scaled up as TakaTaka Solutions scales up.

4.4 Impact / Sustainability

As the milestones of the project were very operationally linked, there are a number of impacts already noticeable:

- Recycling Points
    - Sorting capacity by sorter increased from 600kgs to 800kgs per sorter per day.
    - Ratio of support staff to sorter improved from 2:1 to 3:1
    - Waste handled per acre increased from 16 tons per acre to 24 tons per acre (a recycling point of 1 acre in size can now handle 24 tons of waste per day as compared to 16 tons per day previously)
- Composting
    - Production times was reduced from 6 months to 4 months
    - Identification of commercial compost buyers
- Collection
    - Increase from 12'000 to 21'450 households
    - Increase in corporate customers from 10 to 42
- Jobs
    - Increase from 100 to 185 staff

TakaTaka Solutions has, furthermore, become the biggest Kenyan waste management company by early 2018. This in terms of waste collected and number of (residential) customers.

5. Outlook / Further Actions

5.1 Multiplication / Replication

The next planned steps in TakaTaka Solutions' growth are as follows: (by end of 2018)

- Open 2 more recycling points in Nairobi
- Increase daily waste handled to about 60 tons
- Increase full time staff to 300
- Start vertically integrating by building in-house recycling capacity for various waste fractions (hard plastics, plastic bags, cartons & paper, Styrofoam)
- Increase external waste trucks from 3 per week to 8 per week

The planned scale for 2020 is as follows:

- 10 recycling points across 4 cities in Kenya (Nairobi, Mombasa, Nakuru and Eldoret)

- Increase daily waste handled to 200 tons (across the.4 cities)
- Increase full time staff to 800 (across the.4 cities)
- Increase external waste trucks from 3 per week to 40 per week

In order to promote multiplication the following steps are currently being undertaken:

- Initiated land search for additional properties for the recycling points
- Started investment in recycling equipment and build relationships with off-takers for processed materials
- Have conversations with additional external waste companies to partner with TakaTaka Solutions' recycling points
- Engage with municipalities, governments and donors to explore further scaling avenues.

5.2 Impact / Sustainability

The below description of the project's impacts includes all waste managed at TakaTaka Solutions' facilities, including the waste brought by external companies. September 2016 was the start of the project, April 2018 was the end of the project whereas 2020 describes the goals for that year (and refers to the anticipated impact across the four mentioned cities).

Social & Environmental Impact Analysis					
Stakeholder	*Outcome*	*Sep 2016*	*April 2018*	*Dec 2020*	*Indicator*
1. Urban residents					
Underprivileged youths	Job creation for underprivileged youths	100 jobs created	180 jobs created	800 jobs created	Jobs created
Lower income neighbourhoods	Waste collection becomes affordable at Ksh 100/household/month (50% of normal price)	10'000 clients	16'000 clients	60,000 clients	No. of clients in lower income areas
All income areas	More reliable, frequent and environmentally friendly waste collection	12,000 clients	20'000 clients	72,000 clients	No. of clients
2. Environment					
	A cleaner and healthier Nairobi	4,700 tons/year	14'600 tons/year	73,000 tons/year	Amount of waste collected
	Increase in recycling of collected waste from currently 5% to up to 95%	4,450 tons/year	13,870 tons/year	69,350 tons/year	Amount of waste recycled
	Decrease of greenhouse gas (GHG) emissions (all fractions – new myclimate methodology)	4,450 tons/year	13,870 tons/year	69,350 tons/year	Amount of waste recycled
3. Farmers					
Farmers	Improved agricultural productivity	62 tonnes sold/month	150 tonnes sold/month	790 tonnes sold/month	Amount of compost sold
4. Cities					
City councils	Municipal landfill costs decrease as up to 95% of collected waste is recycled	4,450 tons/year	13,870 tons/year	69,350 tons/year	Amount of waste recycled
	Municipal councils are able to provide waste management services to all its residents	12,000 clients	20'000 clients	72,000 clients	Amount of clients
5. Industries					
Recycling industries	Reliable supply of clean recyclables	1,410 tonnes/year	4,380 tonnes/year	21,900 tons/year	Amount of recyclable waste sold

Benefits for customers of TakaTaka Solutions waste management services*:*

- Low-income areas: TakaTaka Solutions customers benefit from services that are 50% cheaper than those of other formal service providers (who charge KES 200 per household vs TakaTaka Solutions KES 100 per household). The further benefit from improved cleanliness at their houses as well as reliable and frequent services (twice a week collection vs once a week).
- Middle- to high-income areas: TakaTaka Solutions customer benefit from better services offered at a comparative price point (KES 250 for middle income households and KES 500 for high income households). The services are more reliable (punctuality of collection), cleaner (9 bin liners per month vs 0-4 bin liners per month), more professional (quality of vehicles and staff) and more environmentally friendly (95% recycling rate).

6. Lessons Learned / Conclusions

This project's aim was to prepare TakaTaka Solutions for multiplication/replication by supporting core areas of operations (recycling point efficiency, composting efficiency, sustainability reporting). This goal was achieved and TakaTaka Solutions is now ready for the next steps in its growth trajectory.

While not the main purpose of the project, the following findings can be extrapolated:

- **Working with (Swiss) consultants/senior experts makes sense if the consultancy scope is narrowly defined and the consultants are specialized**: The work with both Swiss senior experts went very well. The main reason for this was that the work scope was narrowly defined (compost production efficiency improvements & recycling point efficiency improvements). Also, both experts had significant technical expertise in their respective areas.
- **In dysfunctional markets, like the waste management sector, vertical integration becomes a necessity:** The waste management sector has various gaps in its value chain, such as a lack of recyclers for various waste fractions as well as a lack of organic waste processing. This requires that companies, like TakaTaka Solutions, who want to build a new model in this space need to incorporate large parts of the value chain in-house (e.g. composting, recycling). This goes counter to most markets in developed countries, where new companies tend to specialize on specific parts of the value chain.
- **Low-tech solutions make more sense for developing countries:** Most recommendations by the Swiss senior experts implied the application of low-tech technology (e.g. windrow composting vs Gore-tex composting sheets, simple pallet trolleys instead of fork lifts). In markets where the consumer's ability and willingness to pay are reduced, low-tech solutions compared with cheaper labour make sense.
- **Waste producers care about environmental impact but require translation**: Clients of TakaTaka Solutions very much appreciated the environmental analyses offered. However, they often demanded for explanation of concepts like CO2 emissions and the like. Adding information like 'how many trees this saves' makes complex analyses more tangible.

7. References

- Addendum to final report (below)
- Sample recycling report
- Explanation of sample recycling report
- Report 2nd recycling report
- Efficiency Indicators Report

8. Annex

Addendum to final report

Report on tested compost process and sales

The report by the Swiss Senior Expert, Jacque Fuchs, had the following recommendations:

- Improvement in sorting process
  - Switch from negative to positive sorting
  - Implement a quality control step after sorting
- Change in composting process:
  - Switch from Gore-tex technology to windrow composting → Tractor pulled windrow turner
  - Sourcing of garden waste: Purchase a mobile garden shredder
  - Quality control: Set-up a small onsite laboratory

The following has been implemented (or is in the process of implementation):

- Sorting process: The change from negative to positive sorting has been done. Also, each kg of sorted organic waste is now rechecked by a Quality Control person. This two-step sorting process has significantly improved the quality of the organic waste coming into the compost process. The photo on the right shows the QC process for organic waste

- Composting technology: TakaTaka Solutions procured a windrow turner (from Austria) as well as a SAME tractor (from Italy). Due to various importing delays, this system has only been operational since March 2018. On the left side is a photo of the windrow turner.

- Garden waste: TakaTaka Solutions recently purchased a mobile garden waste shredder that can be pulled by its trucks. The machine will arrive in Kenya in May 2018.
- Quality Control: TakaTaka Solutions implemented some of the quality control recommendations of the Swiss Senior expert. However, due to the delay in the procurement of the composting technology, his follow-on visit was postponed to July/August 2018. As a consequence, the small laboratory will be installed upon the upcoming site visit.

Endline efficiency report

See attached report ("EfficiencyIndicators_RecyclingPoint.xlsx" on the efficiency comparison at the recycling points (before and after). In summary the following was achieved.

- Efficiency gains in work processes hrs per month: 683 hrs per month → 21% time saving
- Efficiency gains in people hrs per month: 2434 hrs per month → 32% saving
- Increase in sorting capacity by each sorter from 600kgs to 800kgs per day
- Kgs handled by support staff per day increase from Kgs 1200 to kgs 2400
- Waste handled per unit of area increased from 16 tons per acre per day to 24 tons per acre per day

Customer feedback on sustainability analyses

The feedback by the users on the sustainability reports has been highly positive. As seen by the changes in the reports, the reports were continually modified and improved. Particularly focus was

given on translating the environmental benefits into tangible items (trees saved, car kilometers driven). In its current form all clients like the report.

One additional current suggestion is to put all of the databases online and provide custom log-ins for clients. The online portal would also allow customers to run their own analyses for selected periods. While this goes beyond the project scope of improving the reports, TakaTaka Solutions has started working on this suggestion.

Report on 2nd new recycling point – Kikuyu

Following the visit of the Swiss Senior Expert, Markus Webber, in January and February 2017, TakaTaka Solutions built a new recycling point in Banana Hills, Nairobi. A second new recycling point was now built near Kikuyu. For the second recycling poinrt the construction lasted from January to March 2018. It has been in operations since late March 2018 and has an initial capacity of 20tons per day.

The new facility was built taking into account the recommendations of Markus Webber:

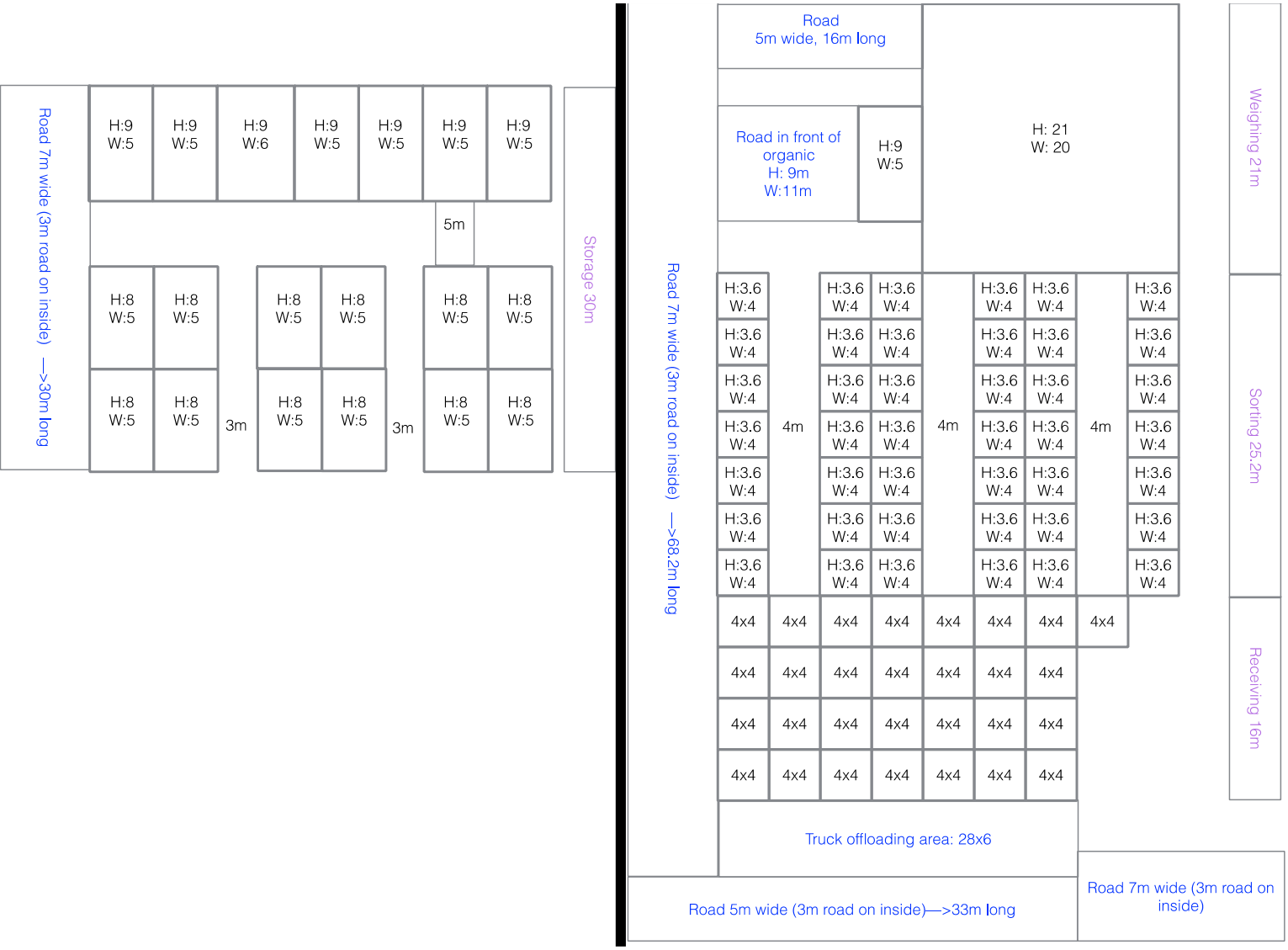
- Concrete floor for the corridors to enable the usage of pallet trolleys.
- Pallet trolley and pallets for moving one-ton sacks from the offloading area to the sorters.
- Enlarging the width of the corridors (from 3m to 4m).
- Enlarging the space per sorter.
- Direct offloading of incoming waste into one-ton sacks.
- Quality control of sorted organic waste on a separate table.
- Using of sack-trolley for transport of organic waste and lighter fractions.

The following recommended suggestions have been changed since Markus Webber's visit:

- Offloading: The off-loading is now executed directly into one-ton sacks. The original plan was to off-load onto a table first and then from the table into the one-ton sacks. The extra step of using the table has proven to be unnecessary.
- Loading of sorted waste into buyers' trucks: The loading of sorted materials into the trucks of buyers is now done manually. The original plan was to use a ramp, however, this has proven to take more time than just loading manually.
- Additional recycling equipment:
    - The new facility now has a shredder and washing line for hard plastics. This makes it possible for TakaTaka Solutions to produce washed flakes, which fetch a higher price in the recycling market as compared to only sorted materials.
    - The new facility now has a baler for cardboard and certain plastics. The baler helps to reduce volumes, thereby making storage and subsequent transport more efficient.

Below photos show various parts of the new facility.

Construction of roof



Layout of the new facility

Concreting of floor

Concreting of corridors using broken bottles as a foundation

New shredder for plastics

New truck for waste collection

Installation of water tank

New skip truck for transport of organic waste

Location of recycling point

Explanation of Recycling Report

The recycling report was jointly developed by TakaTaka Solutions and myclimate Foundation (www.myclimate.org). Myclimate is a Swiss non-profit organization that works to avoid, reduce and offset CO2 emissions. This is done through development of projects and consultancy services.

1. What are greenhouse gas emissions?

Greenhouse gases trap heat and make the planet warmer. Human activities are responsible for almost all of the increase in greenhouse gases in the atmosphere over the last 150 years. The largest greenhouse gas emissions are caused by burning fossil fuels for electricity, heat, and transportation.

2. How does recycling reduce greenhouse gas emissions?

Recycling saves greenhouse gas emissions in two ways:

- Less energy used: Using recycled materials requires less energy than using virgin materials for production. For example, production of recycled paper uses 65% less energy than paper production using primary raw materials. Recycled plastic bottles use 76% less energy.
- Saving on natural resources: Recycling one ton of paper saves 17 trees from being cut down. Each tree helps reduce global warming by capturing and storing carbon dioxide, a major greenhouse gas.

Recycling instead of landfilling waste also saves greenhouse gas emissions. Decomposing waste in these landfills produce landfill gas, which is a mixture of about half methane and half carbon dioxide – both major greenhouse gases.

3. Interpretation of the recycling report

Page 1: Overview of the total waste collected, its composition and the kilograms of greenhouse gas emissions saved with regard to your organisation.

Page 2: This page has four tables/figures:

- "Total GHG emission reduction with TakaTaka Recycling Program" → Shows the greenhouse gas (GHG) emissions reductions by waste fractions.
- "Waste Mass by Fraction and their Share of Total Environmental Impact" → Compares the relative weight of each waste fractions with its environmental impact reduction. Environmental Impact Reduction is a way of calculating environmental impact based on a variety of factors that go beyond GHG emissions. [1]

[1] These calculations, using µ-points, are based on the ILCD Midpoint LCA-method released by the European Commission, Joint Research Centre in 2012. The method includes 16 midpoint

- "Car Kilometers saved by TakaTaka Recycling Program (per month)" → Shows how many car kilometers a normal saloon car would have to drive to emit the same amount of GHG emissions as were saved by the TakaTaka Recycling Program.
- "Forest Area saved by TakaTaka Recycling Program in Football Pitches (per month)" → Shows the number of trees, measured in football fields, that would be needed to capture the amount of GHG emissions saved by the TakaTaka Recycling Program.

Page 3 - 5: The table shows for each waste fractions:

- How it is recycled
- Waste collected in kilograms and %
- GHG emissions saved from recycling vs. making a new product
- GHG emissions saved from recycling vs. landfilling

environmental impact categories: climate change, ozone depletion, human toxicity – cancer effect, human toxicity – non-cancer effect, particulate matter, ionizing radiation HH, ionizing radiation E, photochemical ozone formation, acidification, terrestrial eutrophication, freshwater eutrophication, marine eutrophication, freshwater ecotoxicity, land use, water resource depletion as well as mineral, fossil & renewable resource depletion.

TAKA TAKA SOLUTIONS

Report summary on waste collection for Radisson Blu for March 2018

Please find a summary of an analysis of our collection services for Radisson Blu for March 2018 (and a comparison to February 2018) below, starting from 1st to 28th March. On page 3 we provide detailed information per sub fraction.

17,866 kg

Total waste amount collected

82.4% Organic
9.4 % Paper
3.4% Plastics

Are the main fractions

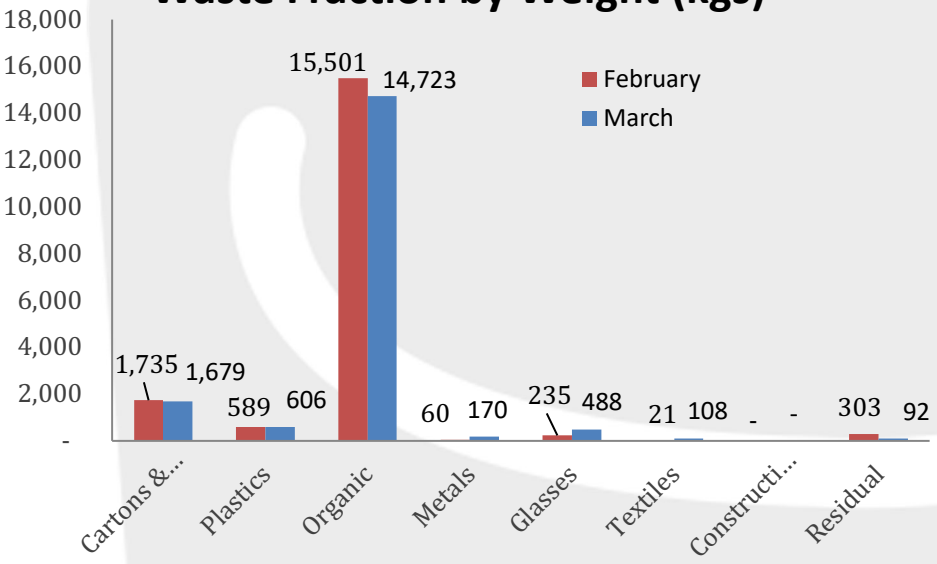
Only 0.5 %

We could not recycle (residual waste)

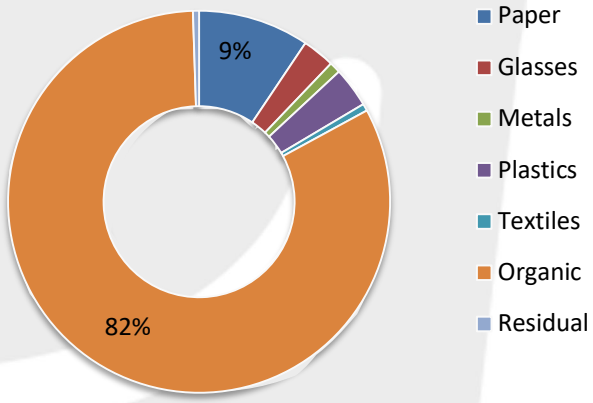
17,749 kg

Of greenhouse gas emissions saved

Waste Fraction by Weight (kgs)



Waste Fractions by Weight (%)



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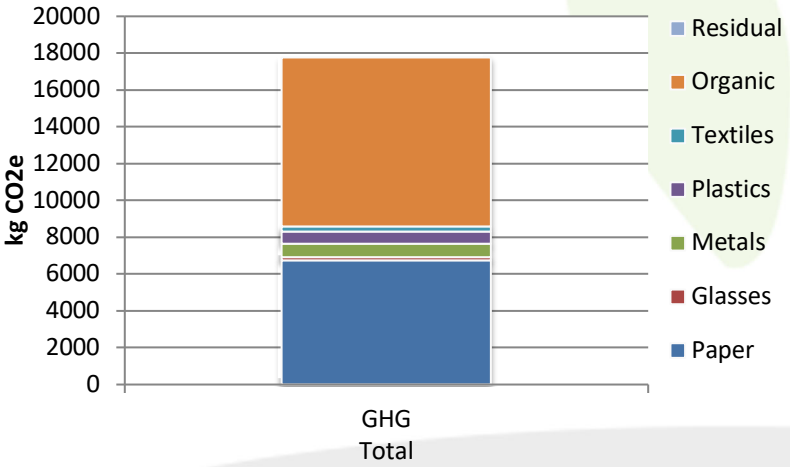
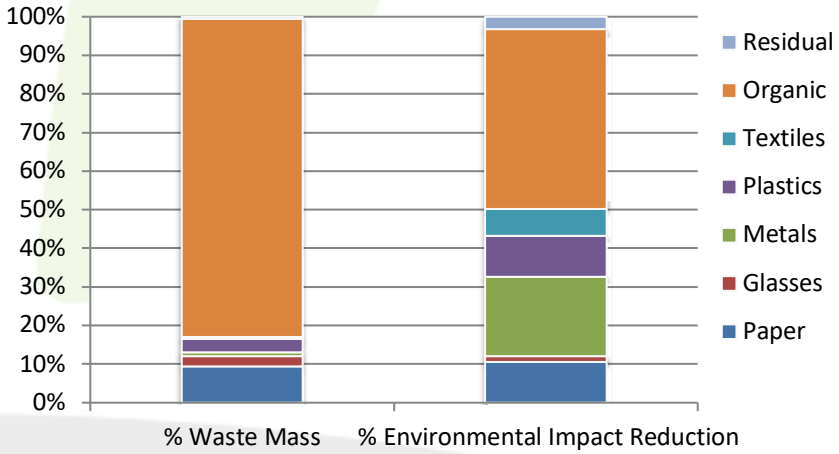
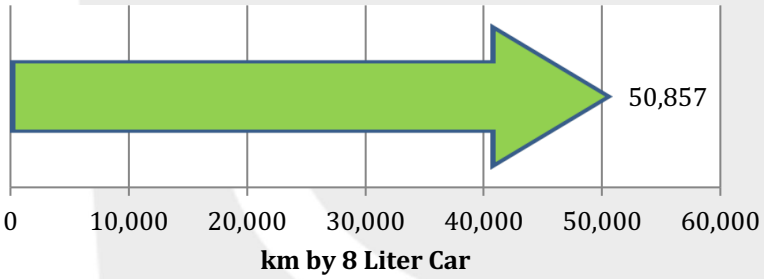
Total GHG Emission Reduction with TakaTaka Recycling Program



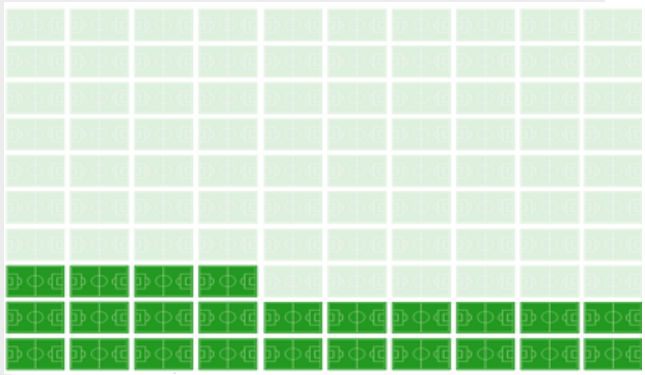
Waste Mass by Fraction and their Share of Total Environmental Impact



Car Kilometers saved by TakaTaka Recycling Program (per month)

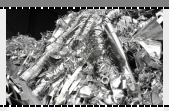


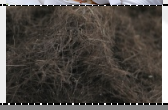
The recycling program for Radisson Blu saves the environmental impact of 50857 km by an average car with a fuel consumption of 8 l / 100 km, equivalent to 101.7 trips from Nairobi to Mombasa.



The recycling program for Radisson Blu saves the amount of CO_2 equivalent to the forest area of 24 football pitches.

TAKA TAKA SOLUTIONS

Fraction		Short description of fractions	How the fractions are recycled	Waste collected [in kg]	Waste collected [in %]	Recycling GHG emissions saved [in kg]	No landfill GHG emissions saved [in kg]	Total GHG emissions saved [in kg]
Cartons & Paper				1,679	9.4%	5,049	1699	6,747
Mixed colour paper		Coloured and white office paper	Tissues, toilet paper	886	5.0%	2,534	1,347	3,881
Loose news prints		Loose news prints	Tissues	-	-	-	-	-
Cartons		Corrugated boxed	New cartons, envelopes	694	3.9%	2,165	312	2,478
Tetra pack		Packages made of hard paper	Chipboards	99	0.6%	349	40	389
Glasses				488	2.7%	137	20	156
Mixed		(broken) clear glasses, clear glass jars	New glasses	488	2.7%	137	20	156
Flat		Legends, moon walker, blue moon	New glasses	-	-	-	-	-
Metals				170	0.9%	743	4	749
Light metals & cans		i.e. paints, food jars, fencing wires, iron sheets	New metals	40	0.2%	175	2	177
Light metal tins			New metals, metal boxes	23	0.1%	101	1	102
Aluminum tins		i.e. canned food, soft drinks and alcoholic beverages	New aluminum tins	-	-	-	-	-
Other aluminum		i.e. sufrias, spray containers	Vehicle parts	31	0.2%	136	1	137
Batteries		i.e. mother boards, cables, wires, fluorescent tubes	New electronic products	6	0.0%	24.53	0	25
Electric bulbs			New electronic products	12	0.1%	53	-	53
E-waste			New electronic products	58	0.3%	254	2	256
Plastics				606	3.4%	636	24	660
Pet bottles		All plastic bottles with a PET symbol	Fleece jackets	115	0.6%	130	5	135

Kasukus		All plastic containers with a straight line of weakness at the bottom	New plastic containers	102	0.6%	105	4	109
Low grade plastics		Plastic containers	Fencing poles	75	0.4%	77	3	80
Fraction		Short description of fractions	How the fractions are recycled	Waste collected [in kg]	Waste collected [in %]	Recycling GHG emissions saved [in kg]	No landfill GHG emissions saved [in kg]	Total GHG emissions saved [in kg]
Plastics								
LDPE		Low-density polyethylene that are elastic and not noisy	Fuel	260	1.5%	268	10	278
HDPE		All supermarket polythenes	Fuel, Plastic road polls	-	-	-	-	-
(BIO-) Polypropylene (PP)		light or heavy (bio) in gauge and non-elastic, i.e. bread wrappers	Plastic road polls for traffic sign	53	0.3%	55	2	57
Milk sachets		Pouches used to pack milk	LDPE	-	-	-	-	-
PVC		PVC carpets and pipes	PP pipes	-	-	-	-	-
Old PP sacks		Nylon bags	PP sacks	-	-	-	-	-
Pipes			New pipes	-	-	-	-	-
Styrofoam			Floor decks, wall panels)	1	0.0%	1	0	1
Hair		Synthetic hair additions, human hair cuttings	Filling material for pillows and sofas	-	-	-	-	-
Textiles				108	0.6%	255	4	259
Textiles		Used garments, beddings, bags	Sofas	108	0.6%	255	4	259
Shoes		Used footwear	New shoes	-	-	-	-	-
Organic				14,723	82.4%	4,908	4,270	9,177
Organic		Decomposable waste (food waste)	Compost	14,723	82.4%	4,908	4,270	9,177

Bones		Skeletons of edible animals	Dog food, chicken food, pig food	-	-	-		-
Construction Materials				0	0%	0	0	0
Construction Materials		Building materials such as cement		-	-	-	-	-
Wood		Wood		-	-	-	-	-
Residual				92	0.5%	0	0	0
Residual		Waste that is not decomposable and cannot be recycled		92	0.5%	-	-	-
TOTAL				17,866	100.0%	11,726	6,020	17,749

NB: We managed to collect;

1. 90 litres of used oil.
2. 5.6kgs of batteries
3. 58kgs of E-waste.
4. 12kgs of Bulbs.
5. We did not receive any engine oil.

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