



Singita Serengeti Annual Review

June 2017

Bioregional

Contents

1.	Message from Graham Ledger, Singita Serengeti Managing Director	3
2.	Message from Pooran Desai, International Director for One Planet Communities ..	3
3.	Summary of progress	4
4.	Singita Serengeti	5
4.1.	The Singita Grumeti Fund	6
4.2.	Locations and departments	6
5.	The One Planet Action Plan.....	7
6.	Carbon Footprint.....	7
7.	Review of progress against One Planet Action Plan	9
7.1.	Health and happiness	9
7.2.	Equity and local economy.....	10
7.3.	Culture and community	11
7.4.	Land use and wildlife	12
7.5.	Sustainable water	13
7.6.	Local and sustainable food	14
7.7.	Sustainable materials	15
7.8.	Sustainable transport	16
7.9.	Zero waste.....	18
7.10.	Zero carbon	20
8.	Sabora Tented Camp – case study	22

1. Message from Graham Ledger, Singita Serengeti Managing Director

This year marks the half way point in our commitment to meet the One Planet 2020 targets and we are proud to acknowledge that we are achieving considerable success in eight of the ten principles. For the areas in which we are struggling, sustainable transport and zero carbon, we are aware of the urgency required to effect solutions to change this trajectory. As an operation that is growing there is difficulty in reducing our impact, particularly in these areas, but despite these set-backs we have implemented solutions to positively shape the next three years. For example, the Singita Grumeti Fund has reduced diesel usage by 25% since 2015 and 40% since 2013. Likewise, for zero carbon we have installed approximately 315 kw of solar and 750 kwh of battery on the property.

While we tend to focus on the areas which need improvement, it is also paramount to mention that we are successfully implementing the eight other principles. This has been shown through accomplishments such as the reduction of plastic water bottles across the company by 64% and the distribution of 200 water reusable water bottles to staff. Additionally, we have taken lead on the issue of water usage by adding 53,000 more liters of rainwater (we now have over 800,000 liters of rainwater catchment across the property), as well as installing 14 new water meters and borehole sensors which are monitored daily allowing us to identify and rectify leakages immediately. Overall, we are proud of the familiarity that the entire company has of One Planet Living and the common knowledge that sustainability must form part of strategic as well as everyday decisions.

2. Message from Pooran Desai, International Director for One Planet Communities

As the One Planet Action Plan (OPAP) becomes more completely embedded into the daily operations of Singita Serengeti it is becoming clearer in which areas the current strategy is sufficient and in which areas new approaches may be required. Before the development of the OPAP Singita was already excelling against a number of the principles, such as Equity and local economy and Land and nature, and rapid progress has been made in terms of both water use and waste management. In two areas; transport and building energy use, progress has been much more limited. These areas were identified at the outset as the most challenging principles – and though a strategy was put in place there is clearly a need to review the approach.

There has been progress in these areas, which includes: overhaul of the water heaters and air conditioning units at Sabora Plains and the PV installation has reduced fuel use by 70%; metering installed across the property allows a much more detailed understanding of where energy is being used; and Singita Grumeti Fund reducing fuel use by 25% in a single year through rationalising vehicle numbers and operational changes. Yet in spite of these changes there is a stubborn increase in the use of fuel overall which is partly due to the increase in staff across the operation. This increase is likely to be reversed only by: increased management accountability for transport fuel use – in the same way that water use has been addressed; and an evolution in approach from 'reacting to increased demand and providing supply' to one of proactively reviewing needs and delivery options

While it is important to highlight the areas where progress isn't being made, it is also as important to showcase the inspiring work that is taking place. The partnerships being forged by the Singita Grumeti Fund to bring new technologies and approaches to conservation will help to protect the incredible gains in biodiversity that have been made in the past 15 years. The staff's passion for conservation is spilling over into a broader sustainability consciousness, driving behaviour change and greater awareness, supported by Singita's commitment to being a Conservation Company.

3. Summary of progress

Progress against the targets (or updated versions of them) set out in the 2013 One Planet Action Plan for Singita Serengeti are laid out below.

In general, Singita Serengeti continues to make excellent progress against eight of the ten One Planet Principles, but in the areas of zero carbon energy and sustainable transport the indicators head in the wrong direction.

This significant overall progress should be set in the context of some of the challenges facing the enterprise, situated in a remote location with weak infrastructure within a low income developing nation (Gross National Income of less than \$1,026 per capita). And while Singita Serengeti wants to support local small businesses, these face significant challenges and sometimes fail to thrive or survive. The tourism revenues Singita Serengeti relies on, mainly from North American and European visitors, are highly vulnerable to economic and security uncertainties.

There continue to be big improvements in gathering reliable data, vital to measuring progress. But this improvement sometimes means that comparisons cannot be made with data gathered in the earliest years of Singita Serengeti's engagement with One Planet Living.

KEY

	Substantially or entirely completed, or a high degree of certainty over deliverability
	On track for a long term target
	Substantially incomplete, behind schedule or doubt over delivery

One Planet Principle	2020 Goal (Baseline year)	Progress / activities
Health and Happiness	Improvement in health statistics	Data collated
	Improvement in local education levels	89 scholarships awarded
Equity and Local Economy	50% of salary expenditure to be on local staff	More than 42% expenditure on local staff
	Local staff in junior management	9 (increased from 3 in 2013)
	100 new jobs, > 60% for local residents (2011)	> 250 new jobs
Culture and Community	10% of guests taking Community Visit	Double to about 5% of guests
	One Planet Centre	Education incorporated into inductions
	Local communities adopting sustainable livelihoods	Ongoing support for local entrepreneurs
Land Use and Wildlife	Establish management effectiveness programme	Indicators in place for each department
	Trends in animal numbers (2011)	Approx. 50kg/ha

	Reduce impact of alien species	Ongoing development of biological control
Sustainable Water	Reduce leakage to < 5%	Between 3% and 9% on camps with reliable data
	Reduce borehole extraction by 50% (2013)	Significant reduction though exact progress not known as unreliable baseline
Local and Sustainable Food	3 new local food lines	e.g. local pork and tea
	All fish sustainable	Continue to monitor
	Improvement in the balance of the staff diet	Increasing meat-free meals and vegetables offered
Sustainable Materials	Import reductions	Woven baskets, key chains and door-mats
	Land rehabilitation	Best practice in rehabilitation continues
	Sustainable construction	Environmental requirements placed in supplier contracts
Sustainable Transport	50% vehicle fuel reduction (2011) (excl. Wildlife Management)	Total: 476,133 litres – 3.5% increase on 2015, 16% increase on 2011
	50% increase in Wildlife Management fuel efficiency (2014)	72,246 litres – 35% reduction on 2015 fuel use and 45% on 2013
	10% reduction in air cargo emissions (2013)	Stabilised at approximately 50% of 2014 value
	50% of guests offsetting or using a low-carbon air carrier	On hold
Zero Waste	90% plastic waste reduction (2014)	Estimate 200kg/month 75% reduction
	10% other waste reduction (2014)	Progress being made in both cases but data inaccuracies hinder reporting
	Overall 90% recycling rate	
Zero carbon	Reduce building energy use 30% (2011)	Approx 6,625MWh – small increase
	100% renewable energy (2011)	approx. 150kW of PV installed

4. Singita Serengeti

Singita is a company which operates 12 tourism lodges and camps across Africa. Preserving large areas of wilderness for future generations while benefitting local communities lies at the heart of its business. Singita Serengeti is based in northern Tanzania next to the Serengeti National Park, renowned for its annual migration of over 1.5 million wildebeest and 250,000 zebra. Here, it works closely with Singita Grumeti Fund (SGF), which is its non-profit conservation partner, adopting a model that integrates community, conservation and hospitality. The goal is that the hospitality offering will support the philanthropic donations to provide a secure and ongoing funding stream for the community and conservation initiatives.

Singita Serengeti is one of the largest organisations in the region employing over 800 staff with more than 90 guest beds. About 70,000 people live in the 21 villages bordering the protected area and the total population of the neighbouring districts is approximately 585,000.

4.1. The Singita Grumeti Fund

The Singita Grumeti Fund (SGF) is the conservation partner for Singita, formed in 2003 to carry out conservation and community development work on the 140,000-hectare concession of land once used for game hunting. The Singita Grumeti Fund works in partnership with Tanzanian institutions to manage these concession lands and enhance the conservation activities in the ecosystem. It also works in partnership with local communities and local government to support development initiatives. The Singita Grumeti Fund has historically been 100% donor funded relying on the generosity of individuals to finance its programmes. The objective is that the Hillside Lodge programme (see below) and the expansion of the tourism operation will help to diversify the funding streams.

The Singita Grumeti Fund is organised into six departments:

1. Conservation Management
2. Law Enforcement and Anti-Poaching
3. Community Outreach
4. Research and Monitoring
5. Relationship Management
6. Special Projects

For more information contact info@grumetifund.org and visit www.singitagrumetifund.org/

4.2. Locations and departments

Singita Serengeti includes:

1. The main lodges and camps
 - o Sasakwa Lodge
 - o Faru Faru
 - o Sabora Tented Camp
 - o Mara River Camp
 - o Explore Mobile Camp
2. 'Back of house' areas:
 - o Sabayaya and Lawatu on Sasakwa Hill
 - o Makundusi Village

The Hillside Lodges comprise a group of like-minded individuals, committed to Singita's 100-year purpose to preserve large areas of African wilderness for future generations. Hillside Lodge partners contribute to the conservation costs on an annual basis and invest in a lodge on the property (this can be private or part of the Singita rental pool). All of the lodges are constructed and operated in line with Singita's commitment to sustainability and One Planet Principles.

Data is generally broken down into these areas, though the Sasakwa data often covers all of Sasakwa Hill, both the back of house areas for staff and Saskawa Lodge which is occupied by guests.

5. The One Planet Action Plan

The [One Planet Action Plan developed in 2012/13](#) laid out a vision for how Singita Serengeti would become a One Planet Community – setting targets to define that vision and outlining the key strategies. The Annual Review of the first three years showed how the foundations to deliver that vision had been put in place in 2013, and key infrastructure installed in 2014 and 2015. This Annual Review focuses on the activities from February 2016 to February 2017, and reports the data for the complete calendar year 2016.

Key successes in 2016 include:

- Sustainable infrastructure
 - Installation of 143kWp of PV (133kWp at Sabora, 10kWp at Mara River)
 - Four additional water filtration equipment units installed to reduce bottled water use by staff, bringing the total to 13 and ensuring that all staff always have access to safe drinking water
 - Over 50,000 litres of additional rainwater-harvesting capacity installed
- Sustainable management
 - 14 additional water meters installed on Sasakwa Hill
 - Maintaining a high level of staff engagement with the One Planet Principles and the action plan
 - Roll out of sustainable procurement requirements for key materials
- Building partnerships for sustainability
 - The relationships formed with conservation partners through the Hillside Lodge project (including Kilima Lodge) has led to a range of innovation in the field of conservation
 - Singita School of Cooking – eight students graduated and seven have been employed at the Lodges. A new intake of eight students has started
 - Singita Grumeti Fund continues its work in the community, for example supporting 89 students in education and hosting nearly 300 children and 23 teachers at the Environmental Education Centre per year.

It is important to highlight that Singita Serengeti is operating in a unique environment. This breeds many challenges; for example many of the local companies are very small and can close with little warning. There are also opportunities; waste is genuinely seen as a resource and there is a desire within the local economy to create businesses that can supply Singita Serengeti.

6. Carbon Footprint

The carbon footprint analysis includes:

- Onsite fuel use; generator fuel, vehicle fuel, liquid petroleum gas and kerosene
- Electricity purchased from the grid
- Flights – business flights and flights for ex-pat staff leave.

As can be seen from Figure 1, generator fuel emissions are significantly higher than grid electricity emissions due to the fact that much of the site is not grid connected and the grid is unreliable in the areas that it is connected.

After an apparent levelling-off of the carbon footprint from 2013-15 it has increased significantly in 2016. This goes against the expectation that it would begin to drop in 2016 due to the installation of renewable energy and energy-efficiency equipment. This is due to two significant trends:

1. A further increase in emissions of refrigerant gases, mainly used for air conditioning (temperatures can exceed 30 degrees Centigrade)
2. A general increase in overall fuel use in all major areas; electricity (17% increase), generator use (5% increase) and vehicle use (3.5% increase).

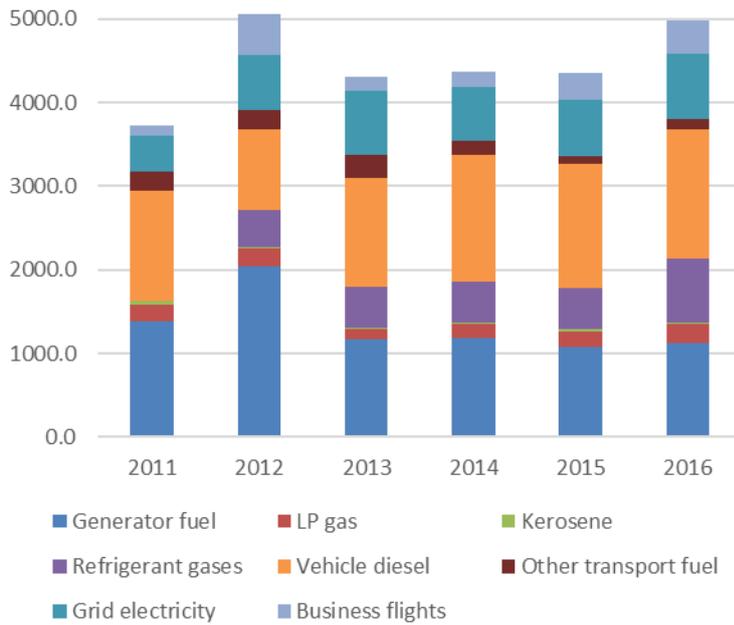


Figure 1: Combined carbon footprint of the main activities at Singita Serengeti from 2011 to 2016 (tonnes of CO₂eq) – note that refrigerant gases were not measured in 2011

The increase in refrigerant gases was mostly due to the overhaul of a system at Sasakwa Lodge and the specific quantities used at each location will be monitored moving forward.

Additionally, when looking at these major areas of fuel consumption in each geographical location there is an upward trend across the years particularly in the largest areas of consumption – Sasakwa Hill and Makundusi. There are successes, such as the reduction at Faru Faru and Sabora Plains, but this is set against the trend of increasing total fuel use. The increase in size of the operations since 2011 (25% increase in beds and 17% increase in staff) partly explains this, and there are also specific reasons such as Grumeti Construction building a bridge and undertaking significant road maintenance in 2016 – driving an increase in transport fuel use. But overall the picture is of a general fuel increase and this needs to be addressed as a matter of urgency.

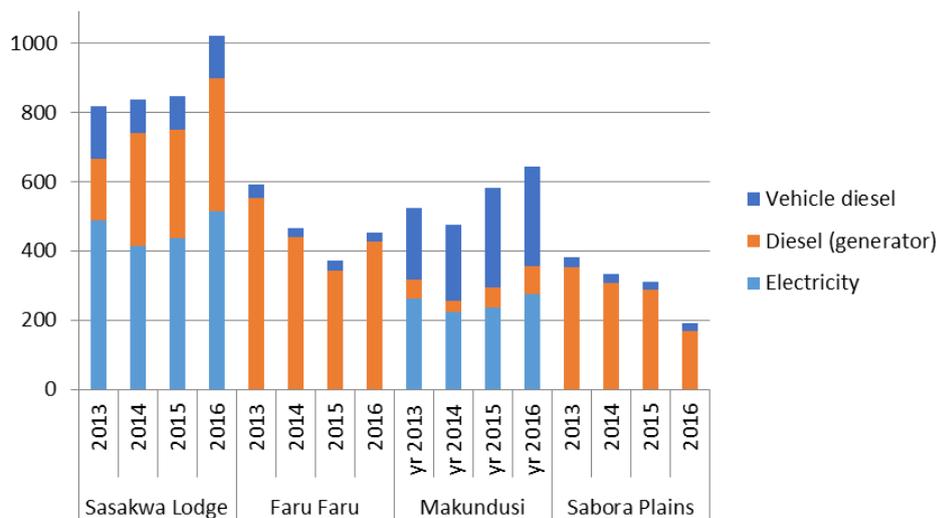


Figure 2: Annual carbon emissions of the three most significant causes at the major geographic locations at Singita Serengeti from 2011 to 2016 (tonnes of CO₂eq)

7. Review of progress against One Planet Action Plan

This section reviews the progress against the targets set out in the 2013 One Planet Action Plan. Some of the targets are revised here and the rationale for this is provided.

	Substantially or entirely completed, or a high degree of certainty over deliverability
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7.1. Health and happiness

	2020 Target	Baseline	2016 performance
HH1	Improvement in key health statistics of local staff	TBC	Complete data collated – analysis required
HH2	Improvement in local education levels	2012: Five students sponsored by SGF completed high school and continued to college	89 scholarships awarded, four continued to college

7.1.1. Key activities in 2016

- The clinic serving staff and their families implemented a new system to collate all data about visits
- Ongoing One Planet activities linked to Health and Happiness included;
 - Meat-free Mondays
 - Range of activities including; cook-off, sketching competition, celebrations and various sporting activities
 - February was 'Health Month' with opportunities for sport every day, including running, yoga and team sports, and attracting 225 participants!
- 89 scholarships were awarded to students from villages bordering the Grumeti concessions to attend vocational colleges, university or private secondary schools. Out of seven advanced level secondary students, two joined university studies in Bachelor of Science in Pharmacy and another two obtained admission for diploma courses in Education and Pharmacy.

7.1.2. Plans for 2017

- The clinic will pilot a system to track and record information from patients seen, allowing for a diagnosis to be matched easily to the workplace. This can help address certain public health issues (e.g. malaria from stagnant water)
- Singita Serengeti will be participating in a voluntary malaria clinical trial to investigate a natural supplement that can help to prevent malaria
- Singita Grumeti Fund is awarding 100 scholarships to local students for primary, secondary, vocational studies and university.

7.1.3. Summary

As Singita Serengeti grows ongoing efforts are being made to improve the health of staff and the working conditions overall.

7.2. Equity and local economy

	2020 Target	Baseline	2016 performance
Eq1	50% of salary expenditure to be on local staff	2011: 73% Tanzania, 45% local district (approx.) 2013: 67% Tanzania	More than 42% local
Eq2	Selected local staff to be trained to fill junior management roles	2013: more than three	Nine local staff Grade 7 or higher
Eq3	Creation of 100 new jobs of which more than 60% will be for local residents	Tanzanian Staff 2011: 659 (62% from the local district) 2013: 745	801 Tanzanian staff

7.2.1. Key activities in 2016

- A needs assessment was conducted in villages bordering the reserve which involved 400 household surveys and interviews with 85 key informants
- Based on this assessment a new project UPLIFT was developed and a proposal prepared which highlights key focal areas moving forward: Education and Rural Enterprise Development
- 276 students and 23 teachers attended the five-day residential course at the Environmental Education Centre
- The Grumeti Horticultural and Marketing Co-op Society (GHOMACOS), a local growers' cooperative, generated \$283,450 in revenue for its 71 members – a 10% increase on the previous year
- 163 beehives were sold to community members on a cost-share basis – double the number of the previous year.

7.2.2. Plans for 2017

- Singita Grumeti Fund is partnering with the world-renowned Concordia Language Villages to implement an English Immersion Camp for primary school students, with 2017 being a pilot year before the camp is scaled up. The expectation is that improving English language skills among primary school students will help to ease the transition as they move from primary school, where teaching is in Swahili, to English-speaking secondary school
- Singita Grumeti Fund is partnering with Raizcorp, a leader in enterprise development in Africa, to roll out its Rural Enterprise Development work
- Singita Grumeti Fund is starting a mentoring program whereby scholarship recipients will be paired with a mentor to support and encourage them through their studies.

7.2.3. Summary

Singita Serengeti is providing increasing benefits and employment for the local community and working on improving the wellbeing of its staff.

7.3. Culture and community

	2020 Target	Baseline	2016 performance
CC1	10% of guests taking a Community Tour	2013: 5% registered (actual figure higher)	Number of tours doubles, approx. 5% taking a tour
CC2	Creation of a One Planet Centre for guests and staff to promote a culture of sustainability	2011: Environmental Education Centre (EEC) operating fully for local school children	Ongoing staff training, new guest information centre on conservation initiated
CC3	Local communities adopt sustainable livelihoods – (three new village communal lands managed sustainably by 2017)	N/A	Continued support for entrepreneurs; beekeeping, poultry farming and vegetable growing

7.3.1. Key activities in 2016

- Disseminated a quarterly newsletter to staff in English and Swahili highlighting One Planet accomplishments, problem areas, upcoming events and the One Planet Champion
- Instituted monthly Usafi (clean-up) days at Singita Serengeti.
- Formalised the community visit by hiring a local community guide (i.e. small business development), putting together a standard community visit itinerary and developing a pamphlet for guests on the activity
- Implementing a new community visit option for Singita guests to raise awareness about the local communities. This will create a post for a Community Guide and cover:
 - Environmental Education Centre and Singita School of Cooking
 - Singita Grumeti Fund-supported initiatives in the community including; LPG vendor and GHOMACOS
 - Visit to a local subsistence farmer
 - Visit to a local village market and local restaurant for a drink.

7.3.2. Plans for 2017

- Hold 10 One Planet events
- Re-training of Heads of Departments on key One Planet activities
- Training to be provided to local Community Guide by a visiting professional guide
- Disseminate a clause for all staff contracts that incorporates One Planet Principles for all staff to abide by
- Opening of one of Singita Grumeti Fund's anti-poaching observation posts to guests to educate about poaching – delayed by six months
- The Environmental Education Centre will be hosting 288 secondary students and 24 teachers from 12 secondary schools in the area for a five-day residential course where they learn about the environment and the critical role they play.

7.3.3. Summary

Staff engagement with the One Planet Principles is a key strategy within the One Planet Action Plan. This has been very successful in raising awareness and supporting behaviour change in terms of diet and well-being, but now needs to support a change in behaviour linked to transport and building energy use. While guests are provided with some information on sustainability and an increasing amount of information on conservation further engaging with guests about global sustainability remains a significant opportunity.

7.4. Land use and wildlife

	2020 Targets	Baseline	2016 performance
LW1	Establish a management effectiveness monitoring programme and maintain a high effectiveness score	2011: no specific programme in place	Indicators in place for each department
LW2	Trends in animal numbers demonstrate a healthy and resilient ecosystem	2011: 40 kg/Ha of resident herbivore biomass (25 in 2005)	Approx. 50kg/ha
LW3	Reduce the impact of invasive alien species to predetermined levels	Programme in place within the concession	Ongoing development of biological control

Some key successes identified in the wildlife census:

- Large herbivore biomass density has shown a steady increase from about 10kg per ha in 2002 levelling off at around 50kg per ha in 2016
- Buffalo population has risen from an estimated 600 in 2002 to 5,800 in 2016, a 10-fold increase since operations started
- Elephants numbers have soared from about 400 in 2002 to 1,500 in 2016, close to a four-fold increase
- Based on aerial counts, lion population has shown a remarkable upward trend and has shown a 16-fold increase from 2003.

Unfortunately the male East African black rhinoceros who had been brought to Grumeti died due to old age. Amazingly enough, he lived to the ripe old age of 38, something that is quite uncommon among rhino in the wild. Singita Serengeti will continue to seek opportunities for a breeding programme for this critically endangered species.

7.4.1. Key activities in 2016

- 137 local households started using Liquid Petroleum Gas (LPG) for cooking (82 of which purchased without a Singita Grumeti Fund subsidy), reducing firewood harvesting
- Singita Grumeti Fund constructed a Joint Operations Centre which will house the law enforcement and anti-poaching team as well as being the central point for a new Domain Awareness System (see below)
- Formed and trained a Special Operations Group that is responsible for acting on informer information to prevent poaching incidents before they occur. A new accommodation block for the team was also completed
- Completed construction on a 12th scout camp in Ikorongo
- Trialling of a new Domain Awareness System; a real-time database that will gather and coordinate anti-poaching information from numerous sources for more effective and timely deployment of limited anti-poaching resources
- Development of the biological control programme for alien invasive plant species
- 49 former poachers to be trained as game scouts and join the anti-poaching unit.

7.4.2. Plans for 2017

- Domain Awareness System will be rolled out to enhance timeliness and effectiveness of law enforcement and anti-poaching operations
- Implementation of a canine detection dog unit to track poachers. Kennels will be constructed during the first half of the year with the dogs expected to arrive in the second half of 2017
- Research on human-wildlife conflict to better understand drivers, hotspot areas and potential mitigation measures

- Military, law enforcement, medical and physical fitness training for game scouts
- Implementation of a unit to prevent human-wildlife conflict tasked driving problem animals (e.g. elephants) off village land and back into the Grumeti concession.

7.4.3. Summary

Conservation of a world-renowned ecosystem and its wildlife is the greatest success story for Singita Serengeti, with a large and rapid recovery of degraded natural resources having been witnessed. This needs to continue in the face of ongoing challenges from poaching and other human pressures.

7.5. Sustainable water

	2020 Target	Baseline	2016 performance
SW1	Reduce losses through leakage to less than 5%	Faru Faru leakage is 6.7%	Leaks between 3% and 9%
SW2	Reduce extraction of water from boreholes by 50%	2013: monthly average: 11,750m ³ (2015: 10,670 m³) but incomplete data	Average 11,150m ³ – 2% reduction does not reflect actual progress

7.5.1. Key activities in 2016

Ongoing major upgrade to infrastructure:

- 40,000-litre rainwater harvesting system built on Makundusi workshop building
- Rainwater harvesting storage at the guiding department increased from 10,000 litres to 20,000 litres
- 3,000-litre rainwater harvesting system built on the recycling centre.

Strengthening of the monitoring programme:

- Active, daily monitoring of water consumption on Sasakwa Hill. Meters are read daily and reports are disseminated to key decision-makers for real-time action
- 14 new water meters installed on Sasakwa Hill bringing the total number to 48
- Sensors installed in boreholes to measure recharge rate so that informed decisions can be made about the availability of water
- Water sensors installed in tanks on Sasakwa Hill, Sabora Tented Camp and Faru Faru which measure the volume of water available
- As a result of daily monitoring, a large underground leak at Sabayaya, estimated to be losing about 20,000 litres per day, was identified, despite no signs of leakage above ground. This leak was repaired in November 2016.

7.5.2. Plans for 2017

- Install meters on boreholes to capture actual quantity of water extracted at site
- Meters will be linked wirelessly so data is reported to a central database
- Alarms/limits to be set on tank and borehole sensors so that alarms are activated in case of low levels (indicating a leak) or insufficient water supply in the ground
- Prepare standard operating procedures (SOPs) for the use of water at Singita Grumeti. SOPs to be reviewed and signed off by Environmental Committee
- Singita Grumeti Fund is installing 50,000 litres of rainwater harvesting storage at its Joint Operations Centre, Special Operations Group accommodation block and new Canine Detection kennels
- Some water from the boreholes goes to watering holes used by wildlife – meters are being added to quantify this. A trial using greywater to recharge watering holes will be conducted at Sabora, and at Serengeti House collected rainwater will be fed into the borehole.

7.5.3. Summary

There have been large increases in rainwater storage capacity (over 800m³ in total), which should help to reduce Singita Serengeti's dependence on water from underground aquifers and its carbon footprint. Water conservation and careful water use is a key issue for Singita Serengeti, especially during the five-month long dry season. Reliable data about how much water is available and how much is used is critical to success, but there have been problems in measuring these accurately. Recent investment in metering should bring improvements, enabling leaks to be detected and rapidly repaired. Now there needs to be a strong focus on water conservation through standard operating procedures.

7.6. Local and sustainable food

	2020 Target	Baseline	2016 Performance
LSF1	Three new local food lines a year	2012: 40% from local ward (<25km), 2013: almost 100% from region (<250km)	New local food lines introduced – pork and teas
LSF2	All fish to be sustainably farmed or harvested	2013: no red list	Continue to monitor
LSF3	Progressive improvement in the balance of the staff diet	2011: food prepared to meet cultural norms	Regular meat-free meals, increase in vegetables provided

7.6.1. Key activities in 2016

Singita Seregeti was unable to develop the proposed Sustainable Seafood Consortium further due to a lack of local capacity in Dar es Salaam to support this initiative. The Executive Chef continues to review the fish menu and ensure that no red list species are procured and wherever possible all fish is from sustainable sources.

- Continue to use local chocolate (Mama's Chocolate), ground coffee (Kimemo) and tea (Kilimanjaro)
- Inventory of products across guest and staff kitchens that contain palm oil
- Meat-free Monday was expanded to the second manager's mess at Makundusi
- Guests continued to be offered vegetarian options and appropriately sized portions.

7.6.2. Plans for 2017

- Plans to roll out meat-free Mondays at Security mess, junior staff canteen at Makundusi, lodge mess halls, and scout camps
- Remove products that contain palm oil from all guest and staff kitchens
- Only procure honey from local region of Tanzania when available
- Explore opportunities of procuring UHT milk from Azam in Tanzania rather than UHT milk imported from South Africa
- Work with GHOMACOS to grow some produce (e.g. red peppers) that are currently purchased in Arusha
- Procure all meat for Sabayaya from Mwanza (a local source) rather than fly in from Arusha.

7.6.3. Summary

There has been continued progress in promoting consumption of local and sustainably-sourced foods and encouraging staff to move towards a lower meat diet. Progress needs to continue in order to meet the 2020 targets.

7.7. Sustainable materials

	2020 Target	Baseline	2016 Performance
SM1	Imports reduced – three new local/sustainable non-food products a year	Not Applicable	Woven baskets, key chains and door-mats
SM2	Rehabilitation of quarries and murram pits (excavation sites for road maintenance)	2012: none 2013: rehabilitation of 6 pits in process	Best practice in rehabilitation continues
SM3	Prioritising sustainable construction materials	2011: no LEED rated materials, no FSC timber	Environmental requirements placed in supplier contracts

7.7.1. Key activities and successes in 2016

- Terms for the extraction and rehabilitation of natural resources (e.g. stone and sand) are included in supplier contracts
- As part of the Environmental Committee a "Conservation Court" was established to review environmental transgressions – e.g. driving off-road after heavy rains
- Review of the construction and operational performance of Kilima Lodge undertaken and informing subsequent Hillside Lodge developments
- Construction of a playschool at Singita Grumeti (on the hill); an old container was refurbished and fitted with solar panels for energy. 90% of the furniture is made of recycled plastic from plastic that Singita Grumeti sends to Dunia Designs in Arusha
- Guidance on the recommended infrastructure footprint of Sasakwa Hill was developed.

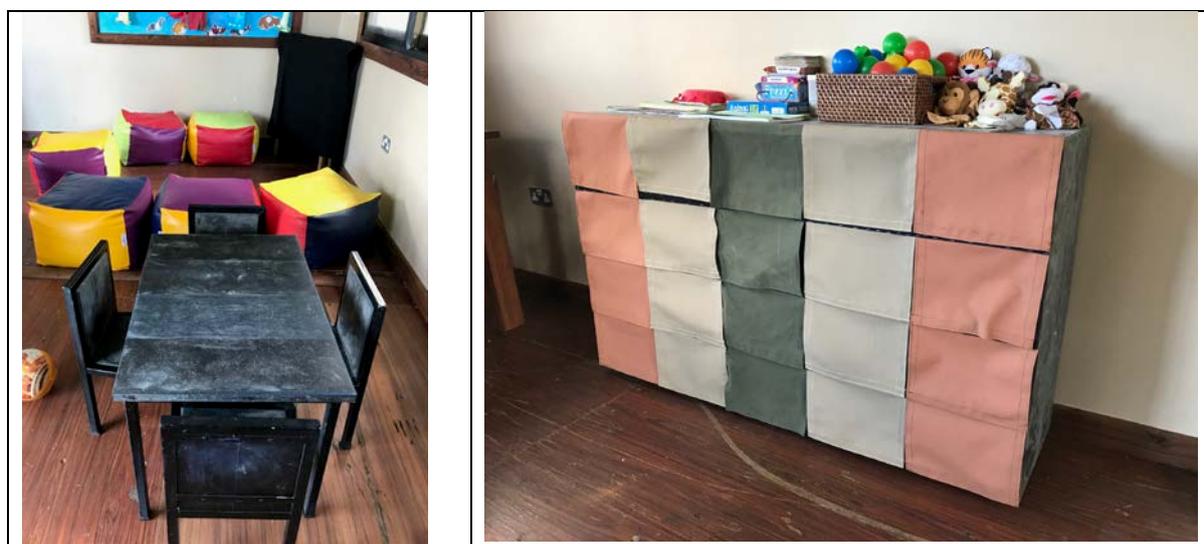


Figure 3: Furniture made from recycled plastic

7.7.2. Plans for 2017

Refurbishment of Serengeti House – learning from Kilima Lodge and taking steps to mitigate the impact through:

- Supplier contracts setting environmental standards
- Low-impact buildings – the additional bedroom at Serengeti House is a tent as opposed to a stone construction
- Permanent scaffold material to be used instead of timber that is soon discarded.

Separately, Grumeti Construction will start to track use of cement and other major construction materials.

7.7.3. Summary

Using sustainable materials for construction in such a remote area within a developing nation is a challenge but also an opportunity to develop local sustainable resources. The refurbishment of Serengeti House will provide about the same financial contribution to wildlife conservation as Kilima Lodge does, but with a significantly lower environmental impact. While the environmental impact from Singita Serengeti's use of materials is small, all opportunities to reduce these impacts impact, both local and global, should be taken.

7.8. Sustainable transport

	2020 Target	Baseline	2016 performance
ST1	50% reduction in all non Wildlife Management* land transport emissions	2011: 408,900 litres vehicle fuel(total) 2013: 467,430 litres (total), 332,330 (excluding WM total)	Total: 476,133 litres (3.5% increase on 2015, 16% on 2011) Total excluding Animal Protection*: 403,887 (16% increase on 2015)
ST2	50% increase in fuel efficiency of Wildlife Management* activities.	2014: Fuel = 8.65% of total WM budget 2013: 134,358 litres	83,555 litres – 25% reduction on 2015 fuel use and nearly 40% on 2013. For all SGF savings are 25% and 35% compared to 2015 & 2013 respectively
ST3	10% reduction in local air cargo emissions	2013: 71,650 litres, 2014: 39,100	22,161 litres (approx. same as 2015)
ST4	50% of guests offsetting or using a low-carbon air carrier	2011: no monitoring of this	Plans for own offsetting programme on hold

* **NB:** Due to restructuring of Singita Grumeti Fund the Wildlife Management department no longer exists – but a comparison has been made based on the new structure.

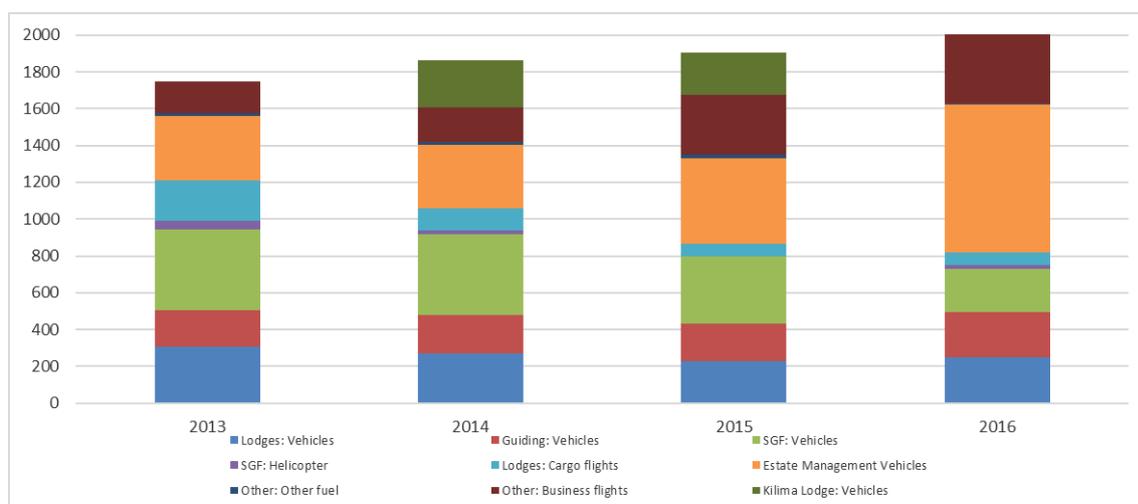


Figure 4: Transport carbon footprint (Tonnes of CO₂eq)

The new Assistant Estate Manager set to start in April 2016 was only in position for a month and a replacement was not in place until early 2017. This has hampered progress,

but should not be seen as an explanation for why every department, except for the Singita Grumeti Fund, has increased vehicle fuel use.

Analysis of the data reveals that:

- The increase in estate management fuel use is due to the construction of a bridge some distance from Makundusi and extensive road repairs
- Guiding fuel use has increased, and fuel per guest has also increased
- Fuel use by the Lodges rose in line with guest numbers
- Singita Grumeti Fund reduced fuel use by 25%
- Completion and handover of Kilima Lodge means there is no consumption in this category.

The reduction achieved by Singita Grumeti Fund was achieved through:

- Restructuring the organisation to enable better oversight of vehicle use
- Using the restructure to reduce the number of vehicles by six from 34
- Changing leave cycles to reduce the number of vehicle journeys made.

The overarching strategy for achieving a 50% reduction in fuel use was to achieve about half the savings through organisational efficiency and half through improved vehicle fuel consumption. The achievement of the Singita Grumeti Fund shows that the 25% organisational efficiency saving is achievable when the departmental managers and directors focus on reducing fuel use.

The increase in emissions from business flights by staff is thought to reflect better data collection in recent years rather than an underlying increase.

7.8.1. Key activities and successes in 2016

- Singita Grumeti Fund reduced fuel consumption by 25%
- Fuel consumption baseline was set for all departments and a 10% reduction target set
- Trailers to reduce the number of trips (e.g. to airstrip or Explore Camp)

7.8.2. Plans for 2017

Targeted workshops were held in early 2017 and identified key opportunities for reducing fuel use, such as:

- Implementing a bus service on Sasakwa Hill taking staff from their accommodation to work places
- Department-specific strategies to reduce use of company vehicles for personal use
- Purchase of a fuel bowser so that large Grumeti Construction vehicles do not need to return to Makundusi for refuelling
- Vehicle rationalisation exercise – to identify any vehicles that can be sold or replaced with motorbikes
- Putting a clear managerial focus on reducing fuel use and making them accountable for delivering savings.

Additionally:

- Singita Grumeti Fund is completing the installation of a borehole with a solar-electricity powered pump in the rhino sanctuary, ending the need to truck in water.

7.8.3. Summary

Singita Serengeti has grown organically from a single lodge and tented camp into three permanent lodges, several seasonal lodges and a major conservation programme. With this growth there is a need to change the mentality on transport from thinking about individual transport needs to an organisation-wide transport infrastructure. Singita

Grumeti Fund has shown that significant reductions in vehicle fuel consumption can be achieved. If this approach can be implemented across the organisation then the 25% savings through operational efficiencies should be delivered. Then, as more efficient vehicles become available, additional savings can be made. Achieving the One Planet Action Plan's targets for sustainable transport requires a stronger management focus.

7.9. Zero waste

	2020 Target	Baseline	Estimated 2016 performance
ZW1	90% reduction in plastic waste (from 2014)	2014: Average 775kg/month 70,000 litres of plastic bottle water purchased	Estimate 200kg/month 75% reduction 35,000 litres of plastic bottled water
ZW2	10% reduction in other waste (from 2014)	2014: 3600kg plus 12,250kg food waste per month	Estimate: 4000 and 9500 kg/month
ZW3	>90% recycling rate	2014: 65% of non-organic, (4,150kg/month)	35% of non-organic waste recycled – error suspected (see below)

Singita Serengeti continues to innovate in reducing waste and increasing recycling. The main materials sent for recycling are:

- Glass sent to [Shanga](#) – local enterprise making goods from recycled materials – or stored if there is insufficient demand
- Cooking oil is also sent to Shanga for use as a fuel
- Hard and soft plastic (such as plastic water bottles) sent to Dunia Designs for making recycled furniture (from October 2016). Previously only hard plastic had been sent for recycling into mosquito nets
- Cement bags reused as plant pots in a plant nursery
- Reuse of cardboard boxes
- Metals collected by a local entrepreneur for recycling.

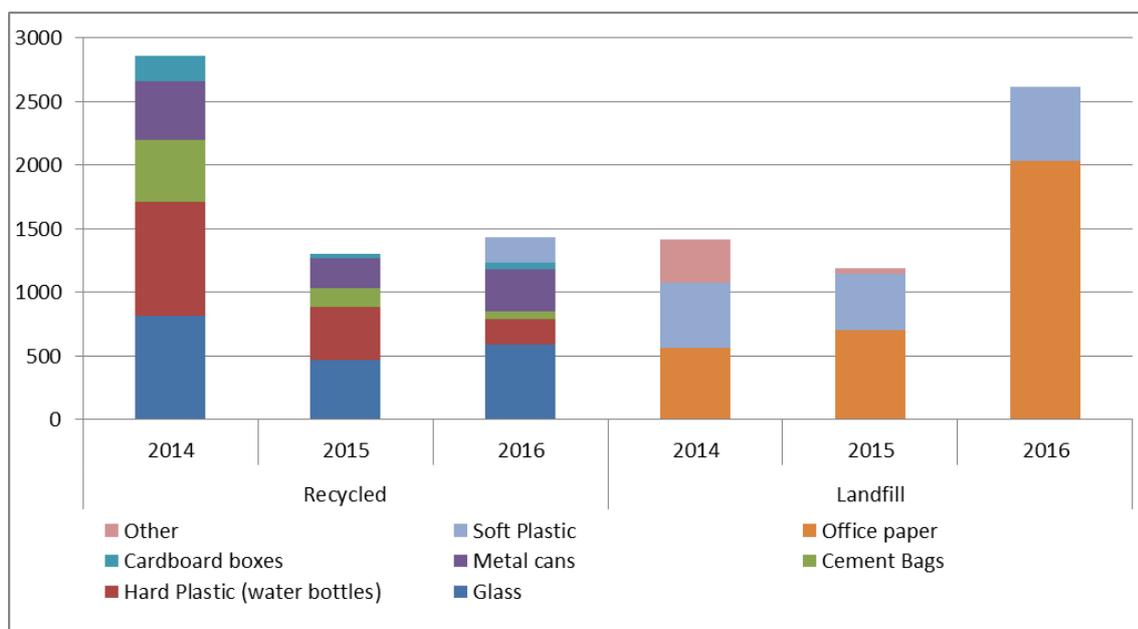


Figure 5: Average monthly waste generated and disposal route (except Kilima Lodge) in kg.

The waste data in Figure 5 paints a mixed picture. The reduction in waste generated that is then sent for recycling continues, but there appears to have been a significant increase in waste paper. Collecting accurate data on waste generation remains a challenge, which makes meaningful year-to-year comparisons difficult. The huge increase in landfilling of paper between 2015 and 2016 is believed to be a data error as the purchasing data shows that less than 500 reams (1 tonne) of office paper was purchased in 2016, about half the amount of 2015

Figure 5 does show a reduction in hard plastic waste – mostly plastic bottles. This is confirmed by the purchasing data. Plastic bottle water purchases in 2016 were 50% down on 2014, before the installation of any water filtration equipment and in December when new measures were put in place these fell by a further two-thirds. If this is replicated in 2017, this will lead to a near 85% drop in plastic waste.

Additionally, the vastly improved management of the waste can be seen through:

- Rehabilitated food waste pits covered in grass
- A clean well-managed waste site
- Food composter taking all of Sasakwa Lodge's kitchen waste.

While accurate data capture remains a challenge waste management is definitely an area where there has been significant progress in achieving sustainable goals.



Figure 6: Food waste pit after 6 months

7.9.1. Key activities and successes in 2016

- Installed four additional water treatment units in staff work areas to increase access to safe, non-bottled drinking water
- Tripled the price of bottled water in November 2016 (removing a subsidy) at Sabayaya which resulted in a 64% reduction in the sale of bottled water
- Established a new relationship with [Dunia Designs in Arusha](#) which takes hard and soft plastic waste and makes it into furniture. Plastic recycled from Grumeti has been used to make children's furniture for the playschool
- Storage area at the recycling centre was expanded to allow for more organised storage of recyclable materials and to keep them dry. A fence was also erected around the incinerator pit to keep out animals

- Distributed 200 One Planet water bottles for new staff
- Put information sheets about the One Planet programme and water bottles in accommodation for visiting contractor staff to discourage the use of bottled water
- Improved disposal and composting of food waste through better management, incorporating all sawdust and brown (woody) waste.

7.9.2. Plans for 2017

- Phase out use of plastic ziplock bags in Sasakwa Kitchen, replacing them with more durable plastic containers
- Have a separate bin for food waste in Sasakwa Kitchen for the composting machine
- Improve food waste disposal through better management, rotating the use of pits and incorporating as much brown waste as possible
- Install household UV water treatment units in manager homes on Sasakwa Hill to increase access to safe drinking water and reduce the need for bottled water
- Shift away from purchasing drinks for Sabayaya and the lodges in cans to glass bottles. This will not only reduce waste generated by cans (which are not easily recyclable in Tanzania and current practice relies on finding a local entrepreneur to take the metals) but will also provide an opportunity for small business development by using local drinks suppliers
- Shift away from using Nespresso in the lodges to coffee machines with local, East African coffee. Training to be organised on the maintenance and use of these machines
- Procure/build a new incinerator that can effectively burn all non-recyclable waste, including medical waste.

7.9.3. Summary

Waste management at Singita Serengeti will remain a challenge due to the lack of local recycling facilities. For example, there are no recycling companies in the region that take batteries or CFL light bulbs. But the fact that the focus is moving to these hard-to-recycle materials highlights that there is now a good level of waste management onsite.

7.10. Zero carbon

	2020 Target	Baselines	2016 Performance
ZC1	Reduce building energy use by 30% from 2011 (Target: 4500MWh)	2011: 6,428 MWh 2013: 6,321 MWh	Approx 6,625MWh – small increase
ZC2	100% renewable energy	2011/2013: minimal % of electricity supply	approx. 150kW of PV installed

In terms of energy consumption in buildings, 2016 was a frustrating year. There have been significant successes, with the commissioning of 133.5kWp of photovoltaic (PV) panels at Sabora. Yet energy consumption from both grid electricity and generators continues to increase. There is no one reason for this and closer analysis shows:

- Fuel use and fuel use by bed night has risen at both Faru Faru and Sasakwa Lodge
- Faru Faru has been experiencing technical issues with the modular generators which has increased fuel consumption
- Sabora has made significant savings with the energy upgrade and installation of the PV (see case study).

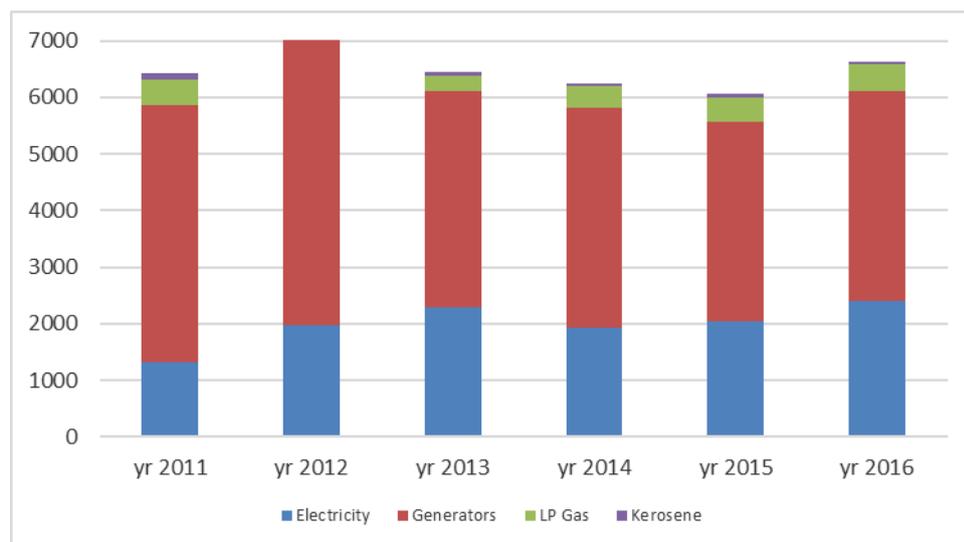


Figure 7: Total building energy consumption (MWh) for 2011-2016 (2012 thought to be an anomaly).

Given the effort and investment that has been made in energy efficiency, it was anticipated that there would be an overall reduction in 2016 but this has not proved to be the case. It is clear that reducing building emissions will require both management focus as well as further infrastructure improvements.

7.10.1. Key activities and successes in 2016

- Sabora Tented Camp launched a 133.5 kWp solar project in April, 2016
- Mara River upgraded its solar system from 10 kWp to 20 kWp in January 2016
- Piloting a solar heat exchanger for the cottage pool at Sasakwa Lodge
- Sold 250 home solar systems (BBOX 7 units) to staff on a 12-month payment plan to increase access to electricity in their homes
- Upgrades to fridges at Sabora and Faru.

7.10.2. Plans for 2017

- 18 solar-heated water geysers are being fitted at Sasakwa Lodge and in 10 back-of-house/Manager homes on Sasakwa Hill to replace old, power-hungry electric geysers
- Procure cover and heat pump for pool at 'pilot' cottage at Sasakwa Lodge
- Install timers on pool pumps at Sasakwa Lodge to save electricity
- Sell 33 BBOX 17 units to staff to increase access to solar-powered energy at home
- A number of quick power-saving wins were identified at Faru Faru – smaller clothes drier, a pool-pump timer
- PV will be installed to meet 100% of Serengeti House demand
- Full operation of live monitoring equipment with web-based platform for real-time viewing.

7.10.3. Summary

Much like with transport it is possible that the incremental growth at Singita Serengeti has masked that the operation has become the size of a small town with the associated infrastructure needs. This may warrant a change in approach to install and manage the site infrastructure and realise electricity savings which will reduce carbon footprint and benefit the bottom line.

8. Sabora Tented Camp – case study

Sabora Tented Camp is not connected to mains infrastructure and has historically been run by diesel generators. From the end of 2015, Sabora Tented Camp was overhauled, with all electric geysers for hot water replaced by solar geysers and all air conditioning units upgraded to more efficient varieties. At the start of 2016, a PV system was installed including 133.5kWp PV panels, 110kW inverters and a 900kWh battery bank. This was commissioned in April and the results have been impressive with solar energy meeting roughly two-thirds of the energy demand in that period, equating to an annual carbon saving of approximately 200tCO₂eq (equivalent to taking 200 cars off the road).

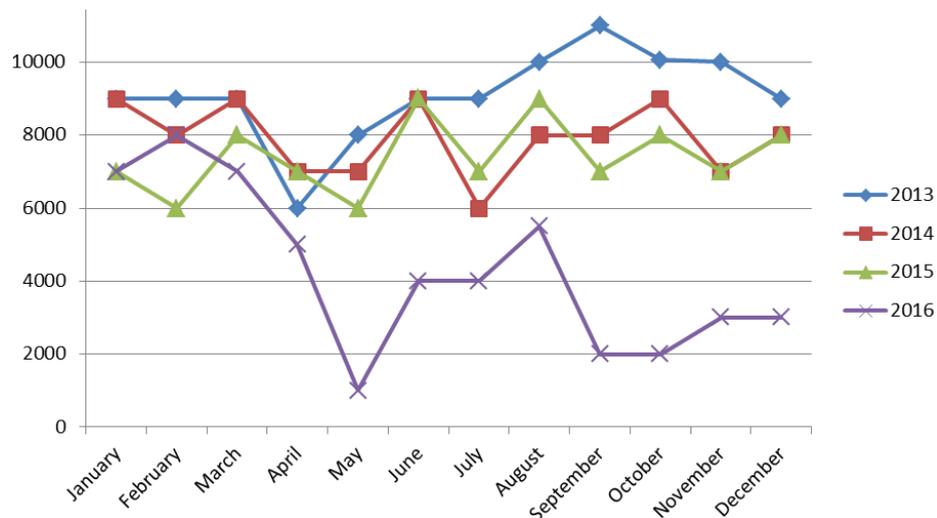


Figure 8; Diesel consumption (litres) at Sabora Tented Camp

While the solar system at Sabora has significantly reduced the camp's carbon footprint, the world-class experience at Sabora Tented Camp remains unchanged. Hermann Naude, Sabora Lodge Manager, says *"guests do not have to sacrifice comfort to be environmentally friendly. The experience is just as incredible as ever"*.

Not only is the solar installation having a positive impact on the environment, it is also generating awareness among Singita staff about the personal benefits of 'green' living. Moshi Basso, the Head Housekeeper at Sabora, proudly shares how *"the solar PV system has improved the quality of life at Sabora. Now I can hear animals at night like lions, zebra and hyenas. I have been working here for 14 years and now Sabora is the nicest home I have ever had"*.

If you listen hard – you may just notice the silence!

