



# Singita Serengeti Annual Review

July 2018

Bioregional

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## **1. Message from Graham Ledger, Singita Serengeti Managing Director**

Five years have passed since the inception of the One Planet program at Singita Serengeti. The integration of the 10 principles into the running of the lodges and the wider protected area has been a largely successful journey of transformation. The success of this program is visible through numbers and data – an area in which we have put considerable time and effort. We have installed approximately 300 kWp of solar across the company, as well as over 800,000 litres of rainwater catchment, throw away less than 75kgs of hard plastic per month and have reduced the amount of water we use by more than 20%.

These are important figures and we endeavour to improve upon them further. Beyond the facts and figures is the importance of the change in culture that has been experienced. The commitment of staff to implement One Planet Living has grown significantly. Staff are proud to not use plastic water bottles and have taken the diesel reduction challenge seriously. The Environmental Committee meetings in particular have developed into cooperative and focused sessions enabling the company to be proactive in its decisions and put sustainability at the forefront of new and established programs and projects.

While we continue to face challenges when it comes to making considerable reductions pertaining to sustainable transport and building carbon emissions, our focus and determination to maintain a positive trajectory is paramount.

## **2. Message from Ben Gill, Technical Manager of One Planet Communities**

With the weight of evidence of how climate change is taking hold across the globe every year is pivotal. For Singita Serengeti 2017 seemed particularly crucial, as significant investments in terms of time and money had been made and yet fuel consumption remained static, and so seeing fuel consumption fall this year is fantastic. Zero carbon energy remains challenging and we believe that developing a clear plan for maximising the use of renewable energy for the main grid-connected areas (Sasakwa Hill and Makundusi) is a real priority for 2018.

Singita Serengeti has been a global leader in terms of conservation and community development for years, and well before the involvement of the One Planet programme, and yet they are clearly not resting on their laurels. The innovative use of technology in conservation is keeping ensuring that biodiversity continues to flourish while helping to minimise the conflict between humans and wildlife. Furthermore, the community development and increased support to the local economy continues to provide opportunities that do not rely on unsustainable exploitation of local natural resources.

We now believe that water use and waste management can now also be added to list of areas where Singita Serengeti is showing real leadership. Although water consumption at any high-end tourism development will always be significant, the management and minimisation are excellent. The next set of sensors will allow any potential impact on the water table to be identified. Furthermore, to see the limited amount of waste for disposal and an immaculate waste storage facility is truly heartening. In our view a visit should be part of the visitor experience!

### 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.

Singita Serengeti has consistently been performing well against eight of the ten One Planet Principles. Travel and transport and Zero carbon energy are however two One Planet Principles where progress has historically been slower. However, with several years' worth of reliable data, it is apparent that progress on Travel and transport is much better than appreciated. Since 2011, total vehicle fuel consumption, excluding Grumeti Construction, has fallen 16.5% and Singita Grumeti Fuel has reduced by over 30% in two years. Similarly, with zero carbon energy, all indicators are moving in the correct direction – with the caveat that a spike in the use of refrigerant gases due to issues with an air conditioning system has masked the progress.

In the areas of water and waste Singita Serengeti is now achieving best practice performance standards, which is excellent to see. The staff engagement around One Planet Living has created a very positive attitude to sustainability. Health month for example drew together hundreds of staff who took part in activities like exercise and healthy eating.

There is still work to do in these areas, such as a zero carbon plan for Sasakwa Hill, ongoing management of Grumeti Construction, and a continued drive to ensure that staff engagement leads to effective behaviour change. But it is clear that good progress is being made.

Amongst the many successes three particular highlights of the year are:

- Procedures whereby the Environmental Committee reviews all new infrastructure and refurbishment plans from an environmental perspective
- Canned soft drinks were replaced with returnable glass bottles which are sourced through a local supplier; in a location where cans cannot be recycled, this has had a profound effect on waste reduction
- Reducing vehicle diesel consumption by nearly 30,000 litres compared to the previous year.

Singita Serengeti continues to play a vital role in preserving a globally iconic ecosystem and supporting its neighbouring communities. They are now undertaking this work while reducing the resource use consumption and impact on the global environment.

#### 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 compared to baseline year in brackets	Progress / activities
Health and happiness	Improvement in health statistics	Monitoring system in place
	Improvement in local education levels	114 scholarships awarded 100% of students passed exams
Equity and local economy	50% of salary expenditure to be on local staff	62% staff local (2011: 45%)

	Local staff in junior management	11 staff at grade 7 or higher, (2013: around 3)
	100 new jobs, > 60% for local residents (2011)	807 Tanzanian staff, 2011: 659
Culture and community	10% of guests take Community Visit	8% (2013: 5%)
	One Planet Centre	Staff training, engagement with guests re conservation
	Local communities adopting sustainable livelihoods	Beekeeping, poultry, farming and horticulture
Land and nature	Establish management effectiveness programme	Canine unit and Domain Awareness System (DAS) implemented
	Trends in animal numbers (2011)	Herbivore biomass density: 50kg/Ha (2016)
	Reduce impact of alien species	Ongoing removal – 511 Ha treated
Sustainable water	Reduce leakage to < 5%	7-10%
	Reduce borehole extraction by 50% (2013)	Minimum 20% saving
Local and sustainable food	3 new local food lines	Canned soft drinks replaced with local supply in returnable glass bottles
	All fish sustainable	Monitoring
	Improvement in the balance of the staff diet	Meat free meals and increased vegetables
Travel and transport	50% non Grumeti Construction vehicle fuel reduction (2011) (25% through logistics)	16.5% reduction on 2013
	Grumeti Construction land transport emissions stabilised and effectively managed	15% increase on 2016 but fuel saving measures implemented
	10% reduction in air cargo emissions (2013)	Stable at 60% below 2013 level
	50% of guests offsetting or using a low-carbon air carrier	Address at Singita Group level
Materials and products	Import reductions	> 3 new products
	Land rehabilitation	Ongoing
	Sustainable construction	Integrated into supplier contracts
Zero waste	90% plastic waste reduction (2013)	90% reduction
	10% other waste reduction (2014)	Measuring – approximately stable
	Overall 90% recycling rate	Recycling of almost all recyclable waste
Zero carbon energy	Reduce building energy use 30% (2011)	6.5% reduction on 2011
	100% renewable energy (2011)	Further 65kW PV installed. 300kW PV produced > 370MWh – meeting 9% of building energy consumed

## 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 the Singita Grumeti Fund, 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 was formed in 2003 to carry out conservation and community development work on the 140,000-hectare concession of land once used for game hunting. 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. Anti-Poaching and Law Enforcement
3. Community Outreach
4. Research and Monitoring
5. Relationships
6. Special Projects

For more information contact [info@grumetifund.org](mailto:info@grumetifund.org) and visit [www.singitagrumetifund.org/](http://www.singitagrumetifund.org/)

### 4.2. Locations and departments

Singita Serengeti includes:

1. The main lodges and camps: Sasakwa Lodge, Faru Faru, Sabora Tented Camp, Mara River Camp, Explore Mobile Camp, Serengeti House
2. 'Back of house' areas: Sabayaya and Lawatu on Sasakwa Hill, 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 Sasakwa data often covers all of Sasakwa Hill – both back of house areas 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 Reviews of previous years show how the foundations were put in place in 2013 and key infrastructure installed. This Annual Review focuses on the activities from February 2017 to February 2018 and reports the data for the complete calendar year 2017. Key successes in 2017 include:

- Sustainable infrastructure
  - Further 50,000 litres of rainwater harvesting capacity
  - UV water treatment systems to eliminate the need for bottled water
  - Solar water heaters and heat pumps installed to reduce electricity demand.
- Sustainable management
  - Infrastructure Guidelines implemented by the Environmental Committee
  - Implementation of health monitoring system
  - Water meters installed to quantify water directed to watering holes
  - Monthly departmental transport fuel targets established and monitored
  - Standard Operating Procedures for water use and purchase of all new electrical equipment.
- Building partnerships for sustainability
  - The relationships formed with conservation partners through the Hillside Lodge project has led to a range of innovation in the field of conservation – such as the implementation of the Domain Awareness System
  - Partnerships with Concordia Language Villages and Raizcorp are bringing targeted skills development to the region
  - Singita School of Cooking continues to train local people.

## 6. Carbon footprint

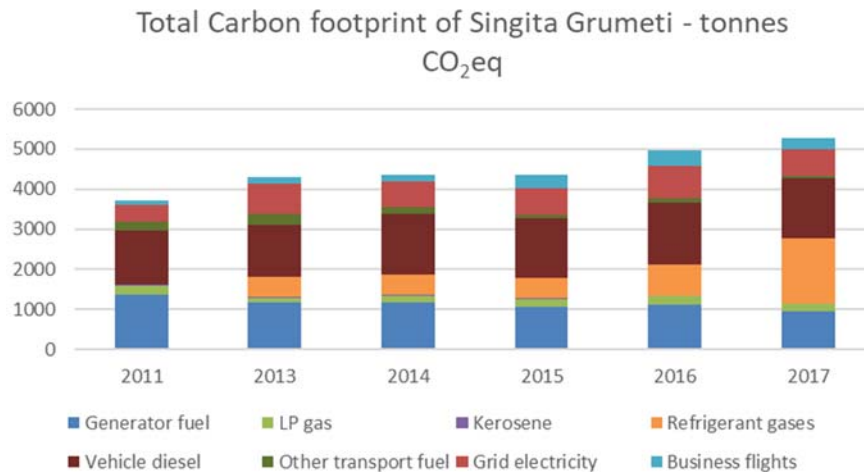
The carbon footprint analysis includes:

- 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.

### Initial analysis of the carbon footprint (

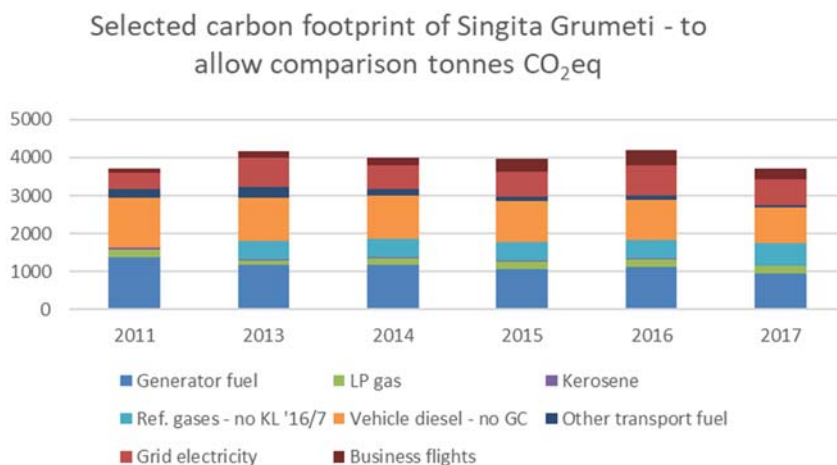
Figure 1) is discouraging with a 6.5% increase but closer analysis reveals:

- A doubling of refrigerant gas emissions – which now equate to close to 30% of the carbon footprint
- No reduction in the transport carbon footprint despite a 9% reduction in fuel use outside of Grumeti Construction.



**Figure 1: Combined measures carbon footprint of the main activities at Singita Serengeti, 2011 and 2013-17 (tonnes of CO<sub>2</sub>eq) – (refrigerant gases were not measured in 2011)**

As discussed in more detail in the Travel and transport section, Grumeti Construction both delivers services normally delivered by municipalities and provides crucial conservation services. In the case of the refrigerant gases, better data management has linked the huge increase to problems with the air conditioning system at Kilima Lodge. When Kilima Lodge refrigerant gases and Grumeti Construction fuel are excluded (Figure 2) we see that the carbon footprint is around 11% down on both 2016 and 2013 (the first year with comprehensive reliable data). Further analysis shows that the carbon footprint of each major location (Sasakwa Hill, Faru Faru, Sabora and Makundusi) all fell.



**Figure 2: Selected carbon footprint for Singita Serengeti – excluding Kilima Lodge refrigerant gases and Grumeti Construction fuel use from 2011 to 2017 (tonnes of CO<sub>2</sub>eq) – (refrigerant gases were not measured in 2011)**

Obviously, the total carbon footprint should be falling, not only when specific issues are removed, but what this analysis shows is that:

- Detailed data monitoring is allowing an accurate understanding of where impacts are. Refrigerant gases are being monitored by location and so the real reason was identified, and steps have been taken to ensure that this is controlled in the future. So, it is hoped that this is a once-off incident and will not impact on performance in coming years
- Aside from this once-off incident, the only significant area where the carbon footprint is not falling is Grumeti Construction – which is discussed in more detail in the section on Travel and transport. This cross-departmental fall is encouraging.



**Highlight: Environmental Committee**

The Environmental Committee, including participation from the Managing Director, Executive Director of the Singita Grumeti Fund, Head Ecologist, Head of Construction, Estate Manager, Tourism Manager and One Planet advisors, meets every two to three months in an effort to prevent negative effects on the environment. The committee plays a critical role in weighing up the pros and cons of physical expansion with respect to the environmental consequences. When it comes to new projects, heads of department are required to present to the committee on:

- Why the project is needed
- How the impact of the project can be minimised

This has already had a significant impact with construction being rationalised and several non-construction solutions identified to prevent the need for new infrastructure. For example, as an alternative to three new houses the porch areas of several cottages has been enclosed to provide additional space. Also, instead of building a new storage room at Sasakwa Lodge, the old Equestrian Centre space has been utilized for storage. The process also allows Grumeti Construction to plan more effectively helping them manage their impact – allowing the timing of projects to be managed more effectively.

## 7. Review of progress against the One Planet Action Plan

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

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It also provides:

- Graphical overview – where possible
- Summary of key activities delivered and planned (more information on many of these can be found on the [Singita Grumeti Fund blog](#))
- Comment on progress and performance.

### 7.1. Health and happiness

	2020 target	Baseline	2017 performance
HH1	Improvement in key health statistics of local staff	TBC	Monitoring system in place
HH2	Improvement in local education levels	2012: Five students sponsored by Singita Grumeti Fund completed high school and continued to college	100% of students completing Form IV, Form VI, VETA and university in 2017 passed their courses.

#### 7.1.1. Key activities and successes in 2017

- The clinic implemented a monitoring programme, covering main diseases by location and month, and will build on this in the coming year

- Singita Serengeti in participating in a voluntary malaria clinical trial to investigate a natural supplement that can help to prevent malaria – this runs until 2019
- Singita Grumeti Fund awarded 114 scholarships to local students for primary, secondary, vocational studies and university.

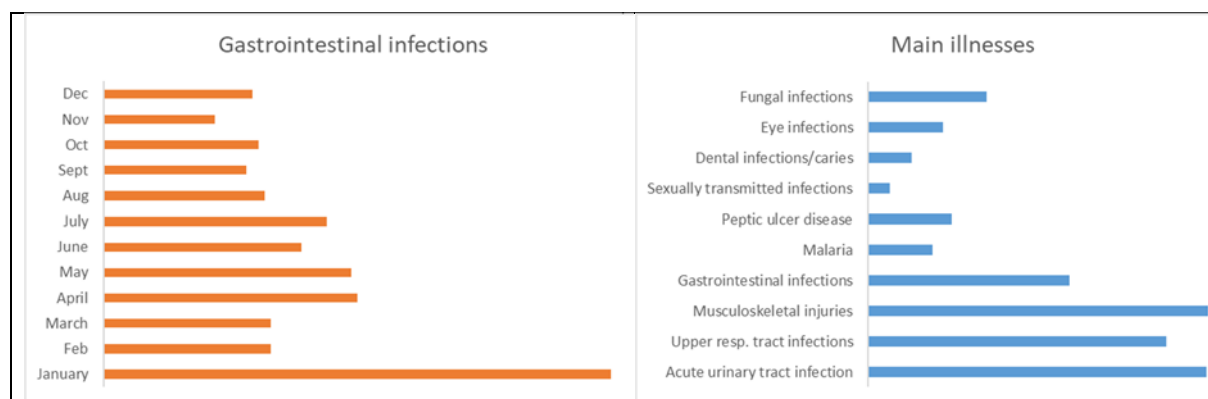


Figure 3: examples of the clinic's data monitoring

### 7.1.2. Plans for 2018

- Continue with implementation of the monitoring programme
- Continue participation in the malaria clinical trial
- October will be 'Health Month' with a sporting activity available every day
- Award 110 scholarships to local students for primary, secondary, vocational studies and university.

### 7.1.3. Summary

Singita Serengeti is located in an area of extremes. The health risks are significant with minimal local medical infrastructure, and yet the location is inspiring and the lifestyle healthy. Singita Serengeti continues to try and improve the medical care available while enabling staff to adopt healthier lifestyles and benefit from the incredible location where they live.

## 7.2. Equity and local economy

	2020 target	Baseline	2017 performance
Eq1	50% of salary expenditure to be on local staff	2011: 73% Tanzania, 45% local district (approx.) 2013: 67% Tanzania	Still not known, 62% staff local, < 3% ex-pat
Eq2	Selected local staff to be trained to fill junior management roles	2013: more than three	11 local staff Grade 7 or higher (20% increase)
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, 2016: 801	807 Tanzanian staff (65% local)

### 7.2.1. Key activities and successes in 2017

- Singita Grumeti Fund partnered with the Concordia Language Villages to implement an English Immersion Camp for local primary school students. The English language skills among primary school students is expected to ease the

transition from primary school, where teaching is in Swahili, to English-speaking secondary school.

- Singita Grumeti Fund partnered with Raizcorp to roll out its Rural Enterprise Development programme in two villages, to diversify the local economy, providing more sustainable livelihood options as opposed to poaching or extracting natural resources within the protected area. 45 local entrepreneurs (50% female) had weekly training seminars tailored to their skill sets and empowering them to develop their businesses.
- Singita Grumeti Fund established a mentoring program whereby scholarship recipients will be paired with a mentor to support and encourage them through their studies, roll out began in 2018
- 288 students and 24 teachers attended the five-day residential course at the Environmental Education Centre where they learn about the environment and the critical role they play
- The Grumeti Horticultural and Marketing Co-op Society (GHOMACOS), a local growers' cooperative, generated \$326,600 in revenue for its more than 70 members – a 15% increase on the previous year
- Increased focus on women and girl empowerment. An event in November focusing on health, confidence and career development was attended by 581 secondary school students.

### **7.2.2. Plans for 2018**

- Identify and train Singita Serengeti mentors for roll out of mentoring programme and pair 25 secondary school students at Issenye Secondary School with a mentor from Singita Serengeti
- Train 120 individuals in enterprise development through Village Learning and guide six entrepreneurs
- Hold English immersion camps for 240 primary school students
- Train 30 primary school English teachers on techniques to improve their teaching abilities
- Hold girls' empowerment events for 1000 girls from local secondary schools
- Continue to host secondary students and teachers from local secondary schools.



**Image 1: Raizcorp mentoring session (photo: Roshni Lodhia)**

### 7.2.3. Summary

Singita Serengeti continues to provide direct support to the local economy through employment and community development and indirectly through procurement. It would be beneficial to be able to clearly monitor and report the percent of staff wages that go to local staff and to ensure that gender equality is effectively promoted.

## 7.3. Culture and community

	2020 target	Baseline	2017 performance
CC1	10% of guests taking a community tour	2013: 5% registered (actual figure higher) 2016: 5%	Number of tours almost double to approx. 8%
CC2	Creation of One Planet information centres for guests and staff to promote a culture of sustainability	2011: Environmental Education Centre (EEC) operating fully for local school children	Ongoing staff training, guest conservation info implemented
CC3	Local communities adopt sustainable livelihoods – (three new village communal lands managed sustainably by 2017)	N/A	Continued support for entrepreneurs in beekeeping, poultry farming and vegetable growing



Image 2: Faru Faru and Serengeti House team at the ever-popular local food cook-off

### 7.3.1. Key activities and successes in 2017

There has been a significant focus on increasing guest exposure to and engagement with local social and conservation issues:

- Local Community Guide trained by a visiting professional guide to support the community tour
- Opening of one of Singita Grumeti Fund's anti-poaching observation posts to guests to educate about the challenges and successes associated with wildlife conservation
- Increased marketing of the community tour led to an 80% increase in number of guests attending to approximately 8% of guests.

All this has helped contribute to a 10-fold increase in donations to the community and conservation work to just over \$1m in 2017!

Additional activities included.

- Re-training of Heads of Departments (HODs) on key One Planet activities
- Held 10 One Planet events with staff
- Disseminate a clause for all staff contracts that incorporates One Planet Principles for all staff to abide by.

### 7.3.2. Plans for 2018

- Hold 11 One Planet events
- Work with HODs to set three One Planet targets for 2018 per department
- Disseminate One Planet training and sustainability Standard Operating Procedures (SOPs) effectively; e.g. a Standard One Planet training presentation and a folder with all SOPs
- Continue to develop and disseminate the Green Gazette to all staff on a quarterly basis in English and Swahili.

### 7.3.3. Summary

The range of regular events linked to One Planet is proving successful in supporting behaviour change in terms of diet and well-being and is also contributing to the improved energy consumption of transport and buildings.

There has been increased engagement with guests around conservation and local community – which has driven huge benefits in terms of fundraising. There have also been anecdotes of guests staying at Sabora or Mara and being inspired to ensure that their own house-building projects are sustainable. There seems a further opportunity to use the sustainable infrastructure to engage with guests about broader sustainability issues – which could have wider positive impact.

## 7.4. Land and nature

	2020 targets	Baseline	2017 performance
LN1	Establish a management effectiveness monitoring programme and maintain a high effectiveness score	2011: no specific programme in place	e.g. Domain awareness system
LN2	Trends in animal numbers demonstrate a healthy and resilient ecosystem	2011: 40 kg/Ha of resident herbivore biomass (25 in 2005)	No survey undertaken in 2017, 50 kg/ha in 2016
LN3	Reduce the impact of invasive alien species to predetermined levels	Programme in place within the concession	511 ha treated

#### **7.4.1. Key activities and successes in 2017**

- Domain Awareness System was rolled out to enhance timeliness and effectiveness of law enforcement and anti-poaching operations. The team of three people can track law enforcement, alien plant prevalence and wild fires etc. in real time.
- Implementation of a canine detection unit to track poachers. Kennels were constructed during the first half of the year and the dogs arrived and were trained on detection and tracking.
- A new partnership with the Tanzania Wildlife Research Institute resulted in the successful removal of 26 animals from deadly snares
- The Singita Grumeti Fund's anti-poaching team completed 4,842 patrols
- 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 human-wildlife conflict mitigation unit to prevent human-wildlife conflict tasked with driving problem animals (e.g. elephants) off village land and back into the Grumeti concession.

#### **7.4.2. Plans for 2018**

- Collaring of 30 elephants as part of the Human Wildlife Mitigation programme to provide early warning if elephants are heading towards village lands, so that they can hopefully be herded away from the village
- Bi-annual aerial census
- Relocation of a black rhino donated by the San Diego Zoo to Singita Grumeti to help make a meaningful contribution to conservation in the Serengeti ecosystem
- Ongoing training for game scouts - medical training
- Piloting the use of drones for anti-poaching and law enforcement efforts.

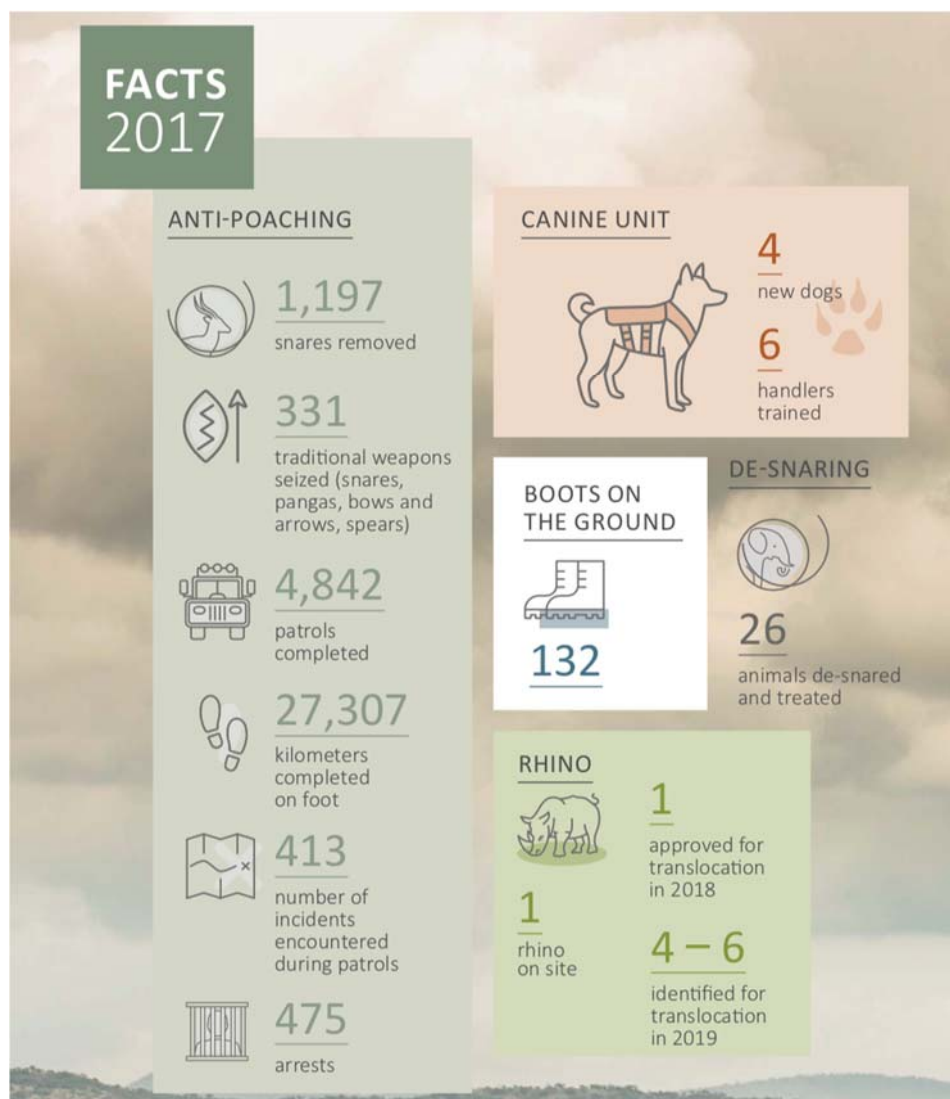


Image 3: Anti-poaching and animal protection summary for 2017

### 7.4.3. Summary

Unfortunately, we are seeing increased pressure on biodiversity globally. The conservation of this world-renowned ecosystem and its wildlife is a great success story for Singita Serengeti. The Singita Grumeti Fund is working hard and using the latest technology to stay ahead of the game and respond to the ongoing challenges from poaching and other human pressures.

## 7.5. Sustainable water

	2020 target	Baseline	2017 performance
SW1	Reduce losses through leakage to less than 5%	Faru Faru leakage is 6.7%	Leaks between 7% and 10% - but accuracy improved
SW2	Reduce extraction of water from boreholes by 50%	2013: monthly average: 11,750m <sup>3</sup> (underestimate) 2016: 11,150 m <sup>3</sup>	Average 9,630m <sup>3</sup> – 20%, total saving is larger than this

The extensive installation of water meters is allowing significantly more accurate monitoring and effective management, and the data highlights the progress that has been made and the excellent standards that are now being achieved. Total water use has fallen by a minimum of 20% from 2013 and the real figure is likely to be higher as data collection was incomplete in 2013. Additionally, per guest water use and per person water use have also fallen significantly and at all lodges (Sabora is not a clear downward trend due to data inaccuracies in previous years).

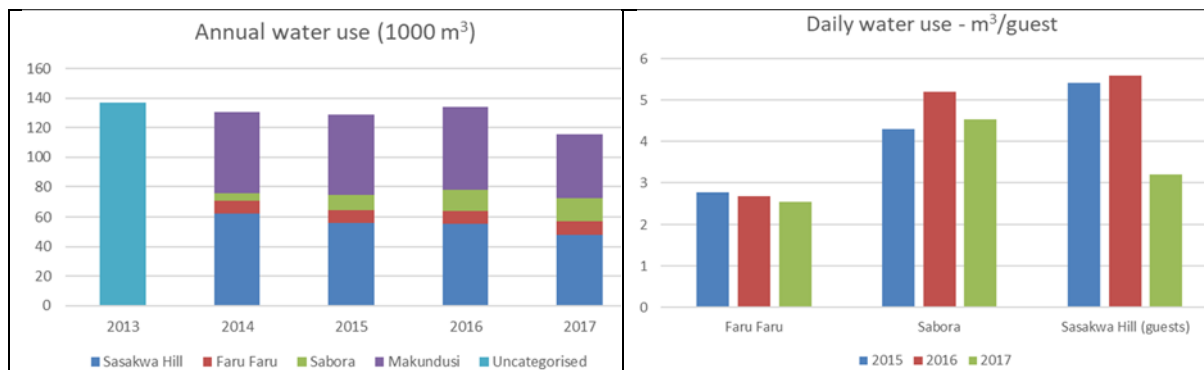


Figure 4: Graphs of total annual water use and per guest-night water use

### 7.5.1. Key activities and successes in 2017

- Sensors were installed in boreholes to monitor the level of the water table so that this precious resource is not over utilized
- Alarms have been set on tanks and borehole sensors which are activated if low-levels are detected which would indicate leaks or insufficient ground water
- Prepared a standard operating procedure (SOP) for the extraction, monitoring and use of water at Singita Serengeti. This SOP was reviewed and signed off by the Environmental Committee and the document was shared in English and Swahili with all staff.
- Singita Grumeti Fund installed 50,000 litres of rainwater harvesting, bringing total rainwater storage capacity to nearly 800m<sup>3</sup>
- Meters were installed to quantify borehole water being directed to watering holes
- At Serengeti House, rainwater is collected and fed into the waterhole.

### 7.5.2. Plans for 2018

- Installation of wireless borehole meters to measure actual extraction and linked to a central database
- Install pool covers at Kilima Lodge to reduce water lost due to evaporation and heat loss
- Wastewater treatment units will be installed at Sasakwa Lodge, Sabora and Faru Faru to recycle wastewater and feed back into waterholes
- Install 50,000 additional litres of rainwater storage on the airplane hangar.

### 7.5.3. Summary

Water management at Singita Serengeti is not perfect, but the improvement is hugely impressive and is now certainly best-practice standard for such a challenging location. The planned installations of wastewater treatment will further reduce demand and ensure that Singita Serengeti is a true exemplar of sustainable water management.

## 7.6. Local and sustainable food

	2020 target	Baseline	2017 performance
LSF1	Three new local food lines a year	2012: 40% from local ward (<25km),	New local food lines introduced – such as



		2013: almost 100% from region (<250km)	soft drinks from Mugumu
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 and successes in 2017

- Meat Free Monday was rolled out at security mess, junior staff canteen at Makundusi, lodge mess halls, and scout camps
- All meat for senior staff is now procured from local town of Mwanza and can be bought in by truck. None is now flown in from Arusha.

Ongoing activities included:

- Remove certain products that contain palm oil from all guest and staff kitchens, e.g. nutella
- Only procure honey from local region of Tanzania when available
- Exploring opportunities of procuring UHT milk from Azam in Tanzania rather than UHT milk imported from South Africa
- Working with GHOMACOS to grow some produce (e.g. red peppers) that are currently purchased in Arusha.

### 7.6.2. Plans for 2018

- Meat Free Monday to be extended to all lodges (for senior managers). This will cover all locations at Singita Serengeti.
- Through the enterprise development program, establish a beekeeping processing facility
- Undertake a visit to Mwanza to identify potential local suppliers of food
- Remove all remaining products that contain palm oil from all guest and staff kitchens

### 7.6.3. Summary

There has been significant effort to ensure that staff have a healthy diet and great progress has been made, such as the wide implementation of Meat Free Monday. Related to this, the attention to detail in trying to improve the sustainable sourcing of food, such as the elimination of palm oil, is highly impressive.

Nonetheless food is a huge contributor to an individual's ecological impact with meat having a disproportionately high impact, and meat consumption at Singita Serengeti remains high. This is a challenging issue at Singita Serengeti with meat having a symbolic importance in the local culture and many of the ex-pat staff coming from areas with a high meat consumption. Therefore, this is an area where Singita should be looking to prioritise during the next phase of engagement.

## 7.7. Travel and transport

	2020 target	Baseline	2017 performance
ST1*	50% reduction in all non Grumeti Construction land transport emissions – 25% through logistics efficiency	2011: total 408,900 litres (l) Non-Grumeti Construction: 2013: 354,850l 2016: 325,000l	295,500 litres 16.5% reduction on 2013 and 9% reduction on 2016
ST2*	Grumeti Construction land transport emissions	2013: 44,612l 2016: 151,150l	174,000 litres – 15% increase to > 35% of fuel

	stabilised and effectively managed		consumption. Specific measures implemented
ST3	10% reduction in local air cargo emissions	2013: 71,650l 2016: 22,161l	22,000 litres
ST4	50% of guests offsetting or using a low-carbon air carrier	2011: no monitoring of this	Issue to be addressed at Singita Group level, not locally

\* **NB:** It is important to note that these targets have been amended. They still cover all land based transport but now Grumeti Construction has been separated out rather than Singita Grumeti Fund. This has been done for three reasons:

1. Grumeti Construction has a highly variable work programme and so fuel use varies significantly from year to year, making comparison challenging
2. Much of Grumeti Construction's work is work that would normally be delivered by a municipal or national government, such as road building and infrastructure, and so would not normally be part of a company's impact.
3. Initially Singita Grumeti Fund had been separated out as it was felt that the conservation work relied on transport and was of critical importance globally. Through detailed monitoring it became clear that although Singita Grumeti Fund's transport is necessary and its work critical, fuel use can still be controlled. On the other hand, Grumeti Construction delivers a lot of work that contributes directly to the conservation effort, which makes it difficult to reduce its fuel consumption. For example, recent work has involved building roads at the far end of the concession to discourage local villagers from bringing their herds onto the concession and to allow access for anti-poaching activities.

It has also now been specified in the target that half of the fuel saving (i.e. a 25% reduction) is expected to come from logistics and efficiencies and the remainder from electric vehicles, which have yet to become available in rural Tanzania.

Separating out Grumeti Construction from the other departments we say that:

- There has actually been a year-on-year reduction in fuel use across the other departments and a total reduction of over 15% since 2013
- 2017 saw the greatest reduction in fuel use by non- Grumeti Construction departments
- Grumeti Construction's fuel consumption has increased year-on-year.

#### **Highlight: reducing vehicle fuel emission**

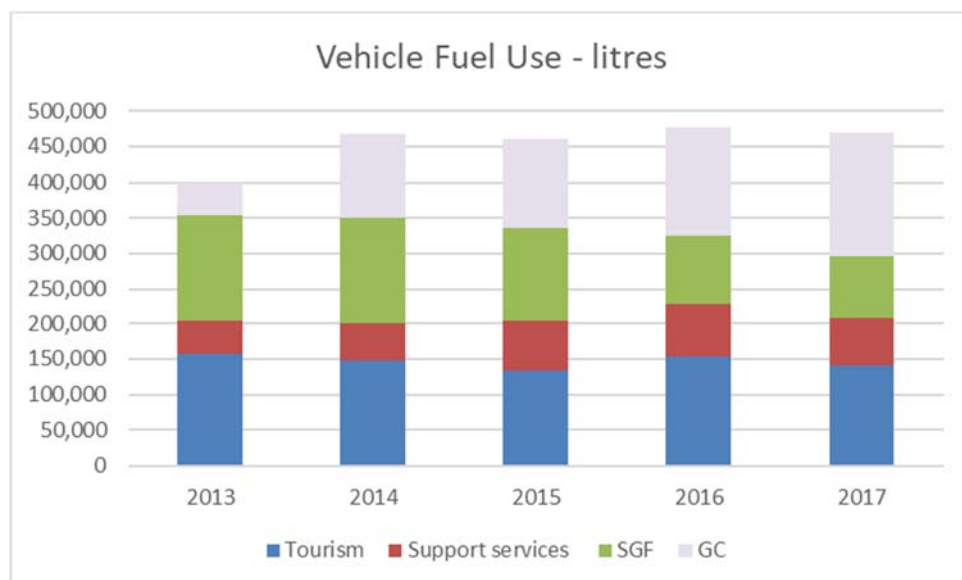
Excluding Grumeti Construction from the 22 main departments that use fuel:

- 13 departments reduced by 10% or more
- 6 reduced but by less than 10%
- 3 departments increased

Specific overall achievements include:

- 9% total fuel saving on the previous year (excluding Grumeti Construction)
- Fuel consumption at the guiding department was stable but per visitor emissions fell by 16%
- Fuel use at all lodges fell despite a 16% increase in guests
- Singita Grumeti Fund reduced fuel use by 10% having achieved a 25% saving the previous year

This is a fantastic achievement for an organisation whose core activities are transporting guests and patrolling 140,000 hectares of land!



**Figure 5: Transport carbon footprint (tonnes of CO<sub>2</sub>eq)**

Measures had been put in place to manage fuel use since 2013, and it can be seen that these were having an impact, but a significant focus has been put on this area since 2017, specifically:

- A workshop manager started in early 2017 with specific responsibility for managing and controlling fuel use. Implementation of more effective data collection and monitoring of vehicles has helped minimise fuel waste and theft.
- All departments were set the simple target of reducing their fuel consumption by 10% compared to the previous year
- Measures were also put in place to reduce Grumeti Construction fuel consumption, most specifically the purchase of a fuel bowser, a mobile fuel tank, so Grumeti Construction vehicles do not need to return to site to refuel and fuel is much more tightly controlled.

On a separate issue fewer ex-pat staff and closer control of flights reduced emissions from flights by 30% - though transport emissions are approximately five times those of flight emissions.

### **7.7.1. Key activities and successes in 2017**

Specific activities undertaken include:

- 10% reduction target for each department
- Fuel bowser to reduce and control Grumeti Construction fuel use
- Vehicle rationalisation exercise – resulted in a vehicle being replaced with three cycles
- Singita Grumeti Fund completed the installation of a borehole with a solar-electricity powered pump in the rhino sanctuary, ending the need to truck in water
- Game scouts in the rhino sanctuary now use bikes to patrol in around the sanctuary instead of vehicles.

### **7.7.2. Plans for 2018**

- Departmental targets for reductions in vehicle diesel consumption of 5% or 10%, depending on whether the previous year's 10% target was hit
- Hold a competition for staff members to find creative solutions to reduce vehicle diesel consumption

Grumeti Construction have bought in a project manager and one of his key objectives is to streamline operations which should have the knock-on benefit of reducing fuel use and allowing Grumeti Construction's 'municipal works', conservation and tourism fuel consumption to be monitored separately.

### **7.7.3. Summary**

This year it has really been demonstrated what can be achieved when managers are required to be proactive about managing fuel consumption and it is fantastic to see the savings that have been made. There are still opportunities for further savings and so Bioregional are keen to see no relaxing in effort here, as a 25-30% saving in non-Grumeti Construction fuel consumption (from 2011) is still realistic.

Unfortunately, electric vehicles have not yet penetrated the sector that is relevant to Singita Serengeti – but smaller electric all-terrain vehicles are becoming available which may allow a trial onsite.

In terms of the fuel consumption of Grumeti Construction this cannot be ignored but it needs to be accepted that the work is of critical importance especially in the climate of increasing pressure on protected land in Tanzania. Steps are being taken to manage and reduce Grumeti Construction fuel consumption – and these need to be stepped up along with a strategy for highlighting how this work contributes to Singita Serengeti's conservation strategy.

## 7.8. Materials and products


	2020 target	Baseline	2017 performance
SM1	Imports reduced – three new local/sustainable non-food products a year	Not applicable	New products: 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

### 7.8.1. Key activities and successes in 2017

During the refurbishment of Serengeti House, the experience of Kilima Lodge was used, and steps taken to mitigate the impact through:

- Increased impact of the Environmental Committee particularly in reviewing the infrastructure and refurbishment plans
- 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.

The quantities of materials used was tracked by Grumeti Construction and an analysis of the embodied energy will be made.

Highlight: Local Drink Supplier	
<p>A soft drink supplier from Mugumu, the closest major town, has been found. This is a win on many levels as:</p> <ul style="list-style-type: none"> <li>- It is a local supplier putting more money back into the local economy</li> <li>- They use returnable glass bottles, which is higher up the waste hierarchy (reduce, reuse then recycle)</li> <li>- Aluminium cans have no formal recycling in Tanzania – they rely on the informal network which can be unreliable</li> <li>- As drinks are bought in from nearby it reduces the carbon emissions of transport</li> </ul>	

### 7.8.2. Plans for 2018

- Develop a Standard Operating Procedure for the procurement of all new electrical equipment stating that all equipment must have an energy rating and be 'best in class' wherever possible
- Develop a guideline and checklist for S&D and interior decorators for procurement
- Switch to FSC or composite wood for all replacement and new decking – an FSC supplier for a local hardwood has been identified
- Where the local grewia plant has been used in shading this will be replaced with sisal (a waste material) so as to discourage local harvesting of the grewia bush
- The Faru Faru refurbishment will aim to maximise the use of local and sustainable materials.

### 7.8.3. 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, both local and global, should be taken.

### 7.9. Zero waste

	2020 Target	Baseline	Estimated 2017 performance
ZW1	90% reduction in plastic waste (from 2013/4)	<b>2014:</b> Average 775kg/month <b>2013:</b> 84,000 litres of plastic bottle water purchased	Estimate 380kg/month 8,800 litres of plastic bottled water – 90% reduction
ZW2	10% reduction in other (non-plastic) waste (from 2014)	<b>2014:</b> 3600kg plus 12,250kg food waste per month	Estimate: 4500kg and 10,100 kg/month
ZW3	>90% recycling rate	2014: 65% of non-organic (4,150kg/month)	Everything that can be recycled now recycled

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) as well as cement bags sent to Dunia Designs for making recycled furniture
- Reuse of cardboard boxes
- Metals collected by a local entrepreneur for recycling
- Office paper was briefly sent to Shanga for reuse in crafts though will be shredded and integrated into food waste to improve the composting process.

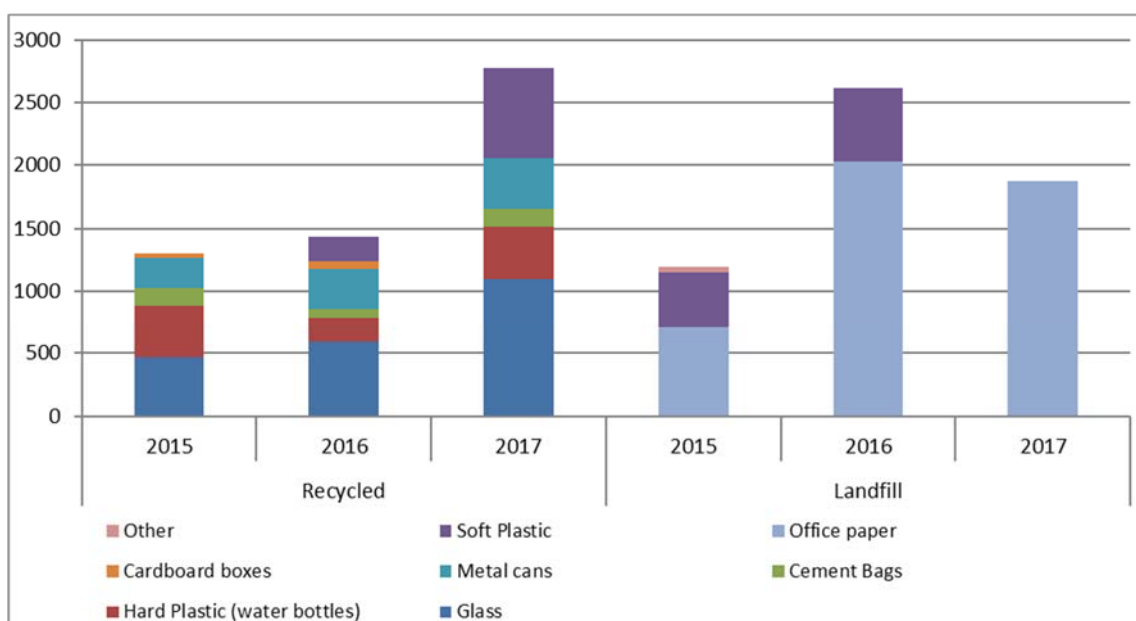


Figure 6: Average monthly waste generated and disposal route in kg

Collecting accurate data on waste generation remains a challenge, which makes meaningful year-to-year comparisons difficult. Nonetheless Figure 6 confirms an increase in recycled material. More pertinently, a tour of the site shows a very well managed and tidy site with minimal non-recyclable material being stored for disposal. In fact it is a stand-out example of a well-managed waste management facility globally let alone locally.

The one area for improvement is waste reduction and specifically food waste. Again, while the data is likely to be inaccurate, it shows little change in the generation of monthly food waste. Discussion with staff agreed that this was an area that still needs to be addressed.



**Image 4: A month's worth of non-recyclable waste and the recycling storage centre**

### **7.9.1. Key activities and successes in 2017**

Specific actions implemented include:

- Installed a separate food waste bin in Sasakwa Kitchen for the composting machine
- Installed 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
- Drinks purchased for Sabayaya and the lodges changed from cans to returnable glass bottles. This reduces waste and also provides an opportunity for small business development by using local drinks suppliers
- Installed a new incinerator that can effectively burn all non-recyclable waste, including medical waste
- Usafi (clean up) days established and held on the last Saturday of every month.

Ongoing activities include:

- Phasing out use of plastic Ziploc bags in Sasakwa kitchen, replacing them with more durable plastic containers
- Improving food waste disposal through better management, rotating the use of pits and incorporating as much brown waste as possible
- Shifting away from using Nespresso in the lodges to coffee machines with local, East African coffee. They have been installed in the main lodge areas but not the lodge rooms. A training on the use and maintenance of the machines has been run.

### 7.9.2. Plans for 2018

Continue ongoing work:

- Find a replacement for Nespresso in the guest rooms
- Find replacement solutions for Ziploc bags and cling film

New projects:

- Set up a competition between lodges to reduce food waste
- Eliminate the sale of plastic bottled water at Sabayaya - to coincide with World Water Day. Distribute water bottles to all staff to launch the campaign.
- Install a glass crusher at the waste site
- Order paper shredders and use in offices so that paper can be recycled
- Hand over the day-to-day management of the recycling site to Makundusi
- Intern to join on site for three weeks to focus on solutions for reducing waste in kitchens

### 7.9.3. Summary

Much like with water, while the waste management is not perfect it is certainly best-practice for the region. Since 2013 there has been a huge improvement in waste management highlighted by:

- As things stand all possible materials are being sent for recycling (though throughout most of 2017 office paper was not recycled)
- 90% reduction in plastic water bottles now that all lodges and staff have access to filtered water.

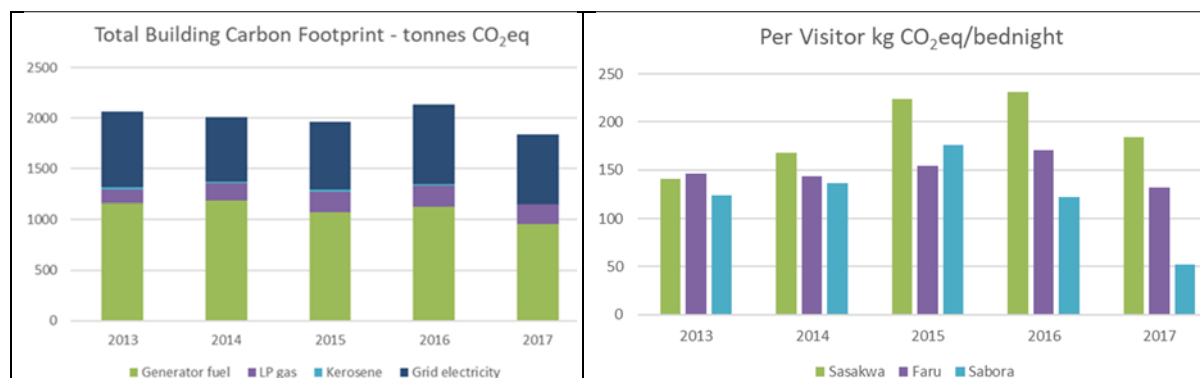
There will always be challenges in such a location, finding solutions for batteries and CFL light bulbs for example, and more can be done to address food waste. Yet for the main part Singita Serengeti can be proud of their waste management.

## 7.10. Zero carbon energy

	2020 target	Baselines	2017 performance
ZCE1	Reduce building energy use by 30% from 2011 (Target: 4500MWh)	2011: 6,428 MWh 2013: 6,450 MWh 2016: 6,800 MWh	Approx. 6,050MWh – 11.5% drop on 2016, and 6.5% on 2011
ZCE2	100% renewable energy	2011/2013: minimal % of electricity supply	65kW of PV installed – total of > 300kW meet >6% of building energy demand (>370MWh)

Significant effort and investment has been made in reducing building emissions and so it was imperative that improvement was seen this year – and happily this is the case. Specifically, as shown in Figure 7, both total building carbon emissions from fuel uses and emissions per bednight (one guest for one night) have fallen at all three main lodges, which is excellent progress. This infrastructure is being supported by attentive energy management – an inspection of Sasakwa Lodge and Faru Faru found no air conditioning units on during the day when guests were out.





**Figure 7: Total building energy consumption (MWh) for 2011-2016**

As noted in the carbon footprint section, refrigerant gases are making an increasingly large contribution to the carbon footprint. Although much of the increase in 2017 is down to specific issues with the Kilima Lodge this nonetheless highlights:

- The importance of natural ventilation and minimising the need for air conditioning
- Ensuring the technologies are appropriate to the region and can be easily managed with local expertise
- The need for detailed data gathering as this issue has only come to light due to being able to analyse the data in detail.

### 7.10.1. Key activities and successes in 2017

- 18 solar-heated water geysers were fitted at Sasakwa Lodge and in 10 back-of-house/manager homes on Sasakwa Hill to replace electric geysers
- Heat pump and pool cover installed at 'pilot' cottage at Sasakwa Lodge
- Installed timers on pool pumps at Sasakwa Lodge to save electricity
- Sold 33 BBOX 17 units to staff to increase access to solar-powered energy at home
- Quick wins at Faru Faru – smaller clothes drier and a pool-pump timer
- PV installed to meet a significant amount of Serengeti House demand.

### 7.10.2. Plans for 2018

Faru Faru will be receiving an overhaul in 2018 which will include:

- Solar power solution to meet up to 90% of the energy needs
- Interventions to reduce cooling demand: shading, cross-ventilation and insulation to be implemented where possible.

Further initiatives include:

- Ensure remote collection of energy data to allow real-time monitoring
- Replace 10 electric geysers from manager homes with solar solutions
- Upgrade the solar system at Mara River so that the camp runs nearly 100% of the time on solar energy
- Improve management and performance of solar installations by engaging an external provider to manage the solar systems at Singita Serengeti
- Each lodge establishes and reports on energy goals
- Further explore opportunities for renewable energy to be installed for Makundusi and Sasakwa Hill.

### 7.10.3. Summary

After the increase in fuel consumption in 2016 it was of vital importance to see a reduction in 2017 – and so it is excellent to see that progress has been made in this area. It is excellent that the refurbishment of Faru Faru will include the installation of PV panels and batteries – this will significantly reduce diesel fuel use at Faru Faru. The last area that needs detailed attention is the main grid-connected area of Sasakwa Hill and

Makundusi. It is understood that proposals for renewable energy are being developed – but it is imperative that a firm plan is in place by the end of the year.