



Singita Serengeti One Planet Annual Review

May 2016

Bioregional

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1. Message from Graham Ledger, Singita Serengeti Managing Director

We are luckier than most to have the privilege to live in such a remarkable part of Africa where we interact with nature and the environment every day. Even looking out of my office window, I get to enjoy huge herds of elephants feeding alongside the airstrip and watch the columns of wildebeest marching by during migration season. These natural spectacles act as constant reminders of how close we are to nature and just how intertwined our lives are with the natural world.

One Planet has given us a useful framework to strategically plan and execute activities so that we can live and operate in a sustainable way. Our goal is to ensure that future generations will have the opportunity to experience the beauty of this international treasure, undiminished by the passage of time and strengthened by our daily actions.

One of the greatest accomplishments of the past year was the completion of Kilima. This is a lodge that forms part of the Hillside Lodges partnership project. One of the most important elements to this partnership is that it includes an annuity conservation contribution to the Singita Grumeti Fund to assist in its endeavors to protect and preserve the Serengeti ecosystem, but the lodge itself embraces 'green' living and boasts carbon neutrality. Throughout construction, the project team made a concerted effort to incorporate One Planet principles so that sustainable materials were used, natural resource suppliers followed stringent environmental guidelines, recycling of waste was the norm, and hundreds of people from our neighbouring communities obtained employment and income. Take for example cement bags. Rather than throw empty bags into a landfill, the project repurposed the bags for pots to plant seedlings in a local nursery. While the remote location provided its fair share of challenges, the way this unique lodge was built and the environmentally-friendly manner in which it operates act as a blueprint for future construction projects of this nature. Kilima is in fact neutral for the electricity supply grid because of an 85Kw solar array installed at Makundusi which completely offsets its electrical consumption, even at a 100% load.

This year heralds the next exciting chapter in our journey towards achieving our One Planet targets. It will be an especially exciting 2016 for Sabora camp as they switch over to solar power. We expect this change to significantly reduce Grumeti's carbon footprint. In the year ahead, we will also be focusing on behaviors and ways in which individuals and departments within the company can work to achieve common goals, such as reduced diesel consumption for transport and improved management of our limited water resources. We look forward to continuing our working relationship with Bioregional to target key operations that will further lighten our carbon and ecological footprints. There is always room for improvement, but I believe that we have achieved significant accomplishments to date and proven that we are well on track to operating and living in a more sustainable manner at Grumeti which in turn I hope will demonstrate to a larger audience just how important it is to act in this sustainable way.

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

This is the third Annual Review of Singita Grumeti. Each year has seen significant change but the scale of progress can be missed unless it is taken as a whole. In the last three years Singita Grumeti has significantly upgraded its infrastructure:

- Overhauled and upgraded one camp reducing fuel consumption by 40% and completed installation of photovoltaic (PV) array at a second camp
- Completed Kilima Lodge; a beautiful building in an astonishing location which is highly efficient and has a PV array that will produce more energy than it consumes
- Rainwater harvesting equipment and water meters
- Complete overhaul of waste management

Even more inspiring is that these successes are complemented by the cultural shift onsite. When talking to the staff about sustainability; to Grumeti Construction about reusing waste materials, or to the Executive Chef about new local foods or sustainable fish, there is a sense that this is now nothing of the ordinary, they are part of the new 'business as usual' – exactly what we need. Cultural change takes time, but initiatives like Meat-Free Monday and health and happiness runs have helped to make sustainability both fun and positive as well as the new normal.

On the other hand at the global scale of the challenge is growing. At the COP 21 Climate Change Summit in Paris in December the international community acknowledged that we need to be aiming to limit the average global temperature increase to 1.5 degrees, not 2 degrees. This means deeper and faster carbon reductions than previously envisaged.

Singita Grumeti really highlights the challenges the world faces in achieving these targets; infrastructure has been installed, staff have been engaged and behaviour changed but with the construction of the new Kilima Lodge, the operational carbon emissions have expanded and carbon emissions remain unchanged this year. We can see this temporary increase as an investment as the new lodge will bring significant resources to support Singita Grumeti Fund's conservation work into the future, and a review of Kilima's construction has identified how the construction impact can be reduced.

With over 200kwp of PV about to become operational or already online we fully expect overall carbon emissions to start reducing significantly in 2016, but the efforts and investments made to date need to continue if the targets laid out in the One Planet Action Plan are going to be met. This level of commitment and effort being shown at Singita Grumeti needs to be replicated worldwide now if we are going to avert dangerous climate change.

This is why we need real leaders – companies who are putting their hands up and saying that however challenging it will be they are determined to operate in a sustainable fashion. Singita Grumeti is making great progress on their journey to being a true beacon of sustainability that can act as an inspiring example to others.

3. Summary of progress

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

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	Monitoring system delayed
	Improvement in local education levels	90 scholarships, 6 completed high school, 4 continuing to college
Equity and Local Economy	50% of salary expenditure to be on local staff	519 staff from local District 70% salary expenditure to Tanzanian staff
	Local staff in junior management	5 local staff Grade 7 or higher
	100 new jobs, > 60% for local residents (2011)	885 Tanzanian staff
Culture and Community	10% of guests taking Community Visit	3%, but a new tour developed
	One Planet Centre	Ongoing training and information provided
	Local communities adopting sustainable livelihoods	Development of local sustainable industries e.g. beekeeping
Land Use and Wildlife	Establish management effectiveness programme	Head ecologist hired
	Trends in animal numbers (2011)	50 kg/ha in 2014 (no survey in 2015)
	Reduce impact of alien species	Biological control programme underway
Sustainable Water	Reduce leakage to < 5%	Water meters installed and monitored daily
	Reduce borehole extraction by 50% (2013)	Average 10,670m ³ – 7% reduction
Local and Sustainable Food	3 new local food lines	New lines introduced – pork, teas
	All fish sustainable	'Sustainable Seafood Consortium' established
	Improvement in the balance of the staff diet	Meat free meals, increase in vegetables
Sustainable Materials	Import reductions	e.g. trailers and tents
	Land rehabilitation	Best practice in rehabilitation continues
	Sustainable construction	Review of Kilima to be undertaken
Sustainable Transport	50% vehicle fuel reduction (2011) (excl. Wildlife Management)	5% reduction in consumption at lodges and guiding, but no significant overall reduction
	50% increase in Wildlife	5% fuel reduction, 15% reduction in

	Management fuel efficiency (2014)	fuel as % of budget
	10% reduction in air cargo emissions (2013)	>2/3 rd reduction through elimination of empty return legs
	50% of guests offsetting or using a low-carbon air carrier	No development on own project
Zero Waste	90% plastic waste reduction (2014)	Estimated 450kg/month 40% reduction
	10% other waste reduction (2014)	Estimated 30% reduction
	Overall 90% recycling rate	Estimated 52% of non-organic waste recycled,
Zero carbon	Reduce building energy use 30% (2011)	10% reduction excluding Kilima Lodge
	100% renewable energy (2011)	> 100kW of PV installed

4. Singita Serengeti

Singita is fundamentally a conservation company. Its core purpose is to protect and preserve iconic destinations for future generations. In order to achieve this purpose Singita adopts a model that integrates community, conservation and hospitality in such a way that the one is wholly dependent upon the other. The objective is to create a system that is ultimately self-sustaining. The revenue that is generated by the hospitality offering, through accommodation as well as philanthropic donations, ultimately funds the community and conservation initiatives

4.1. The Singita Grumeti Fund

The Singita Grumeti Fund is a non-profit organization formed in 2003 to carry out conservation and community development work. The Singita Grumeti Fund works in partnership with Singita Serengeti, collaborates with Tanzanian institutions to manage the concession lands and enhance the conservation activities in the ecosystem, and works in partnership with local communities and local government to support development initiatives.

The mission of the Singita Grumeti Fund is to contribute to the conservation of the Serengeti ecosystem in partnership with local authorities and other stakeholders. The Singita Grumeti Fund is 100% donor funded and relies on the generosity of individuals to keep their programs going.

The Singita Grumeti Fund is organised into four departments

1. Conservation
2. Law enforcement and anti-poaching (equivalent to what was previously called the Wildlife Management department)
3. Community Outreach
4. Research and Monitoring

For more information contact: info@grumetifund.org

4.2. Locations and departments

Singita Serengeti includes:

1. The main tourist lodges
 - 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

Data is generally broken down into these areas, though the Sasakwa data often covers all of Sasakwa Hill, both the lodge and the back of house areas.

5. Carbon Footprint

The carbon footprint analysis includes:

- Onsite fuel use; generators fuel, vehicle fuel, Liquid Paraffin 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.

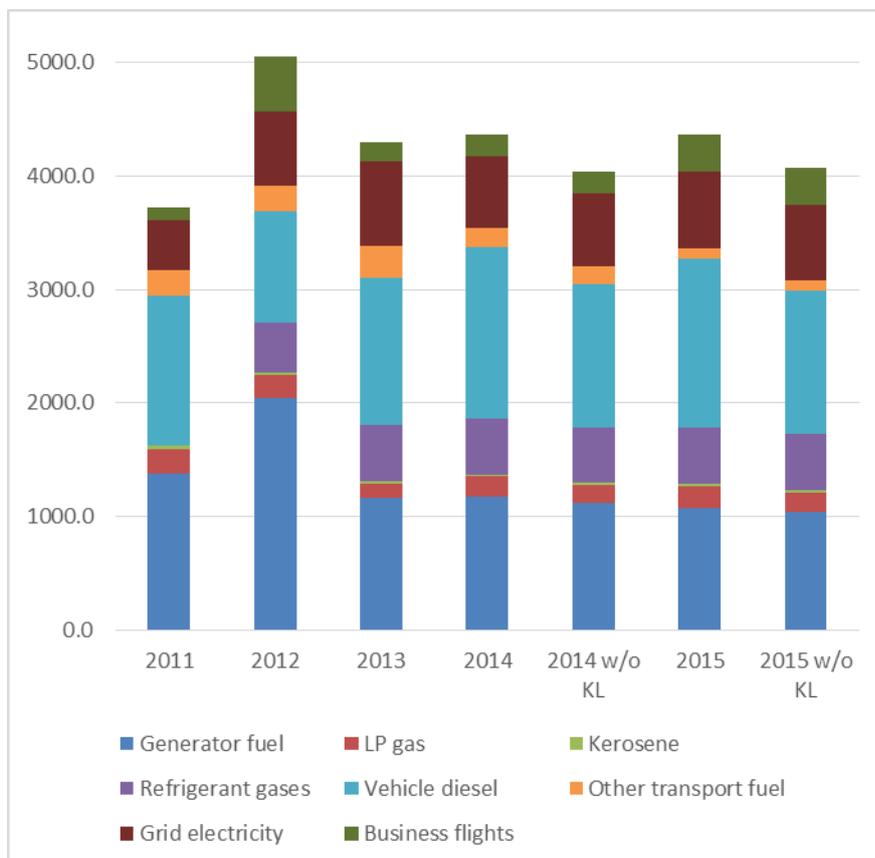


Figure 1: Combined carbon footprint of the main activities of both Singita and the Singita Grumeti Fund from 2011 to 2015 (tonnes of CO2eq) with the emissions associated with the construction of Kilima Lodge separated out to allow direct comparison across years.

At first glance the carbon footprint data shows a slight increase from 2014, though this is due to more complete data collection on flight data (and also on refrigerant gases, but this has been back cast for 2013 and 2014). There are other reasons why the overall footprint has not fallen, in spite of significant improvements in certain areas (e.g. 40% reduction in Faru Faru fuel use), such as the ongoing construction of Kilima Lodge.

Construction of Kilima Lodge began in January 2014 and the Lodge was completed on 21st December 2015, though construction activity was probably higher in 2015 than 2014, with increased emissions due to fuel use on the construction site. These direct emissions associated with the construction, e.g. the transport and generator fuel consumed by construction operations, can be separated out, but this does not cover the complete impact. For example many of the construction staff lived on site, raising Singita Serengeti's fuel and grid electricity consumption outside of the construction site.

So although it is disappointing that again there has not been a significant drop, early data from 2016 is showing that with the completion of Kilima Lodge and the recent installation of over 100kWp of PV (with another 130kWp to come online imminently), 2016 will be the year when the carbon footprint makes a downward trend!

6. 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 two years showed how the foundations to deliver that vision had been put in place in 2013, and key infrastructure installed in 2014.

This Annual Review focuses on the activities from February 2015 to February 2016, and reports the data for the complete calendar year 2015.

Key successes in 2015 include:

- Sustainable infrastructure
 - Installation of over 100kWp of PV
 - Completion and handover of Kilima Lodge (with LEED documentation to be submitted)
 - Solar hot water and efficient air conditioning units installed at Sabora
 - Additional water filtration equipment installed to reduce bottled water use by staff
- Sustainable management
 - Daily reading of newly installed water meters to identify and remedy leakage
 - Initiatives to address transport fuel e.g.; a shuttle bus and consolidation of departmental trips
 - Staff engagement continued; group runs, meat-free Monday, fundraising events etc.
 - Natural Resource use consumption review, and implementation of key recommendations
- Sustainable relationships
 - Established the Singita School of Cooking, providing 15 months training for eight local students
 - Singita Grumeti Fund continues its work in the community, for example supporting 90 students in education and hosting nearly 300 children and 24 teachers at the Environmental Education Centre.

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	2015 performance
HH1	Improvement in key health statistics of local staff	TBC	Monitoring system delayed
HH2	Improvement in local education levels	2012: 5 students sponsored by Singita Grumeti Fund completed high school and continued to college	90 scholarships provided to students 6 completed high school, 4 continuing to college

7.1.1. Key activities in 2015

- Ongoing One Planet activities linked to Health and Happiness
 - Meat-free meals (Meat free Monday) and healthier food
 - Health and Happiness run – more than 50 participants, and twice-weekly group runs
 - Support participants in Kilimanjaro marathon – 20 participants
 - Company interdepartmental ‘Cook-Off’ preparing traditional foods
 - Sketching competition
 - Inter-departmental football league
 - Halloween party where individuals dressed up as a One Planet principle or with recycled materials
- Singita Grumeti Fund upgraded the 11th and final game scout camp to make it more comfortable, safer and environmentally friendly.
- Singita Grumeti Fund provided 90 scholarships to students (34 new and 56 ongoing); eight primary, 48 secondary, 25 vocational, nine university. Six students completed high school and four of them are continuing to college with ongoing support from the Singita Grumeti Fund.

7.1.2. Plans for 2016

- Hold at least six events that celebrate One Planet principles and bring staff together to have fun
- Data on illness trends to be collected within web-based database
- Increase access to a safe exercise space for staff at Mara River and Sabora Plains tented camps

7.1.3. Summary

The One Planet Living programme at Singita Grumeti continues to drive staff health and engagement. There has been a very evident change in the general approach to exercise, with staff from all departments jogging on Sasakwa Hill almost every evening that Bioregional were present for the Annual Review visit. It is excellent that improved facilities are being provided for staff in other locations where jogging is not a feasible option.



Figure 2: Survivors of the Kilimanjaro marathon!

7.2. Equity and local economy

	2020 Target	Baseline	2015 performance
Eq1	50% of salary expenditure to be on local staff	2011: 73% Tanzania, 45% local district (approx.) 2013: 67% Tanzania	69% Tanzania, approx. 40% local District
Eq2	Selected local staff to be trained to fill junior management roles	2013: more than 3	5 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	885 Tanzanian staff, 519 from the district level

7.2.1. Key activities in 2015

- The Singita School of Cooking opened on 1st July. It is a 15 month programme for eight students from the surrounding villages, at the end of which they will have the skills required to operate in a 5-star kitchen environment and can apply for a Commis Chef position in any Singita Lodge.
- Total sales at the local farm cooperative (GHOMACOS) to Singita Grumeti were 560,989,305 TSH (10% increase in sales in TSH), generating nearly 10m TSH profit for GHOMACOS
- Singita Grumeti Fund had a specific focus on capacity building within the community to ensure improve the long-term sustainability of projects. A key element of this has been adjusting the cost share of projects to increase local buy-in and ownership.
- 560 casual labourers from local communities provided with work through the construction of Kilima Lodge. Forty percent of these labourers were employed for a minimum of nine months in 2015.
- Reduction in ex-pat salary expenditure and increase in Shilling expenditure



Figure 3: Breakdown of wage spend (in Tanzania Shillings at exchange rate of payment)

7.2.2. Plans for 2016

- A needs assessment is being undertaken by the Singita Grumeti Fund to identify priority needs in the target villages where they operate and where they can make the greatest impact.
- The Singita Grumeti Fund will support the formation of local businesses, for example by providing technical training, business skills development and support to access low-interest loans to create sustainable businesses.
- The Singita Grumeti Fund to put in place measures to enhance the sustainability of GHOMACOS

7.2.3. Summary

The excellent work that the Singita Grumeti Fund does in enhancing the quality of education provided to youth from local communities is now being further complemented by Singita's initiatives – such as the Singita School of Cooking. These initiatives continue to provide valuable opportunities to the local community.

7.3. Culture and community

	2020 Target	Baseline	2015 performance
CC1	10% of guests taking a Community Tour	2013: 5% registered (actual figure higher)	3% attendance New visit developed
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 training provided to staff, information to guests
CC3	Local communities adopt sustainable livelihoods – (3 new village communal lands managed sustainably by 2017)	N/A	Continued support to local entrepreneurship e.g. beekeeping and businesses supporting alternative fuels

The first target (CC1) has been edited from 80% participating in a Cultural Programme to a more specific focus on the new Community Tour. A range of other cultural activities

are still provided; pottery sessions, dance groups, but capturing the data on this was problematic. While the cultural programme is continuing to evolve, for monitoring purposes, the focus will be on the new Community Tour.

7.3.1. Key activities in 2015

- Career day hosted by Singita in the local village included representatives from 20 departments across the company
- Singita Grumeti Fund carried out career development for new Form 1 and Form 6 scholarship recipients
- Singita Grumeti Fund also conducted soft skills training for the scholarship recipients at the local vocational college.
- Through the Community Outreach Programme of the Singita Grumeti Fund 288 students and 24 teachers attended a week-long training at the EEC. Through this approximately 1,000 students participating in local Malihai clubs (environmental clubs) had their activities improved and strengthened.

7.3.2. Plans for 2016

- Include a mentorship and internship component for all scholarship recipients in collaboration with Singita HR department.
- Opening of one of Singita Grumeti Fund's anti-poaching observation posts to guests to educate about poaching
- Implementing a new community visit 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, GHOMACOS and a local poultry farm
 - Visit to a local subsistence farmer
 - Visit to a local village market and local restaurant for a drink

7.3.3. Summary

While community tours have been promoted to guests, the new tour will act as a focus for increased promotion to give more guests a sense of life in the community and the work done by Singita Grumeti Fund in supporting the community.

7.4. Land use and wildlife

	2020 Targets	Baseline	2015 performance
LW1	Establish a management effectiveness monitoring programme and maintain a high effectiveness score	2011: no specific programme in place	Head ecologist hired
LW2	Trends in animal numbers demonstrate a healthy and resilient ecosystem	2011: 40 kg/Ha of resident herbivore biomass (25 in 2005)	50 kg/ha in 2014 (no survey in 2015)
LW3	Reduce the impact of invasive alien species to predetermined levels	Programme in place within the concession	Biological control programme underway

7.4.1. Key activities in 2015

- A new ecologist was hired to lead the Research & Monitoring Department.
- A new digital radio system has been installed to increase effectiveness of communications
- The deployment of a new eight man roving patrol (quick reaction unit) has enhanced Grumeti's law enforcement and rapid response capabilities.
- Eleven new permanent scout patrol camps and 12 refurbished Observation Posts have been completed at strategic locations throughout the Singita Grumeti Game Reserve.
- The Singita Grumeti Fund acquired an approved gall fly biological control agent, to tackle the widespread infestations of South American weed *Chromolaena* on the reserve and in surrounding village communities.
- 116 poaching incidents and 181 poachers arrested in 2015: an improved arrests-incidents ratio compared to the 164 poaching incidents and 188 poachers arrested in 2014.
- Rhino bull (John) was relocated to Grumeti in December 2015.

7.4.2. Plans for 2016

- Development of the biological control programme for alien plant species
- Releasing the bull rhino into the rhino boma (pen) to enable breeding
- 49 former poachers to be trained as game scouts and join the anti-poaching unit
- Develop a real-time database that will provide instantaneous anti-poaching information to better inform the deployment of limited anti-poaching resources.
- Wildlife census

7.4.3. Summary

The Singita Grumeti Fund continues to respond impressively to the ever-changing threats posed to the ecosystem and its biodiversity. 2016 will be an exciting year with the new bull rhino to be released into the boma.

7.5. Sustainable water

	2020 Target	Baseline	2015 performance
SW1	Reduce losses through leakage to less than 5%	Faru Faru leakage is 6.7%	Water meters installed and monitored daily
SW2	Reduce extraction of water from boreholes by 50%	2013: monthly average: 11,750m ³ (2014: 10,850 m ³)	Average 10,670m ³ – 7% reduction

While water consumption has always been treated seriously a severe drought in early 2015 put a renewed focus on this issue and it was a priority area in 2015. This had an immediate effect with savings in all areas. Overall water consumption is 7% down on 2013, though in reality the underlying reduction in water consumption is better than this because:

- A new meter installed at Sabora Tented Camp in September provided much more accurate figures, in line with the water consumption of other camps, pushing total consumption up
- Construction of Kilima Lodge is likely to have increased water consumption.

However, achieving the target of a 50% reduction is unlikely as:

- Old equipment was replaced as it was known to be inaccurate (which is why Sabora data is excluded from the graph), but this means the baselines are unrealistically low
- Consumption in 2011 is not known and considerable improvements were made prior to 2013, which is used as the baseline.

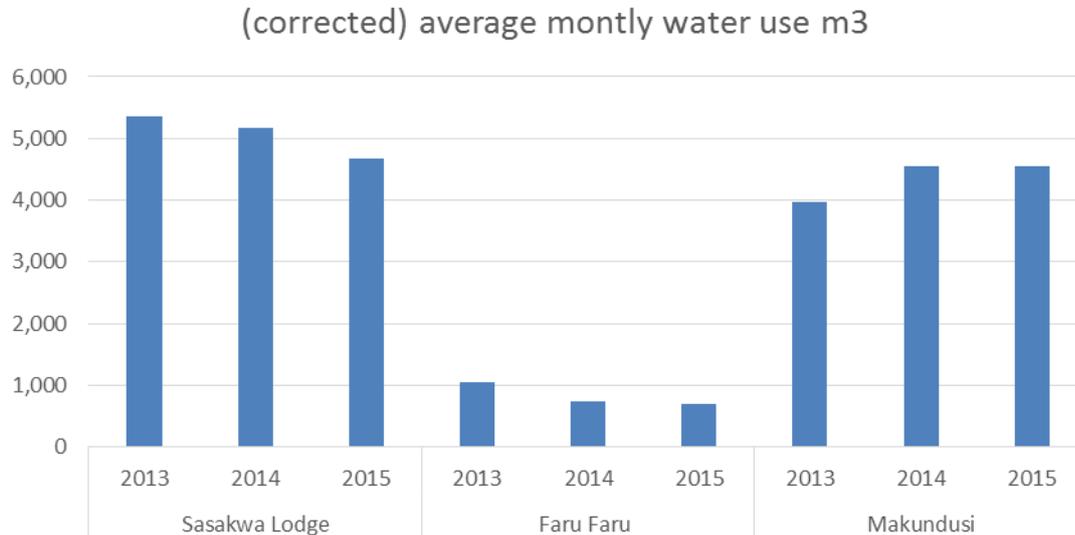


Figure 4: Average monthly consumption (m³) of water consumed, Sabora Tented Camp is excluded due to data inaccuracies

7.5.1. Key activities in 2015

- Water use across Sasakwa Hill is monitored and reported on a daily basis to pinpoint problem areas and leaks. Initial estimates of leaks range from between 5% (Faru Faru) to 10% (Sasakwa).
- Rainwater harvesting equipment at the guiding station covers all vehicle washing needs and the tap from the borehole has been switched off
- A new borehole that operates on solar power was installed. A feasibility assessment was undertaken prior to the drilling to verify the suitability of the borehole in relation to the aquifer levels.
- Singita Grumeti Fund commissioned an external review to critically look at the community water projects and measures to make activities more sustainable.

7.5.2. Plans for 2016

- Sensors to be installed in boreholes to measure the water table level and ensure that the boreholes are not being over utilised.
- Expansion of rainwater harvesting at Makundusi, Explore base & guiding. Installation likely to include 30,000m³ of tanks

7.5.3. Summary

The data shows there has been some improvement in water consumption, though as noted this does not capture the full extent of the improved performance. The sub-metering is allowing water consumption to be investigated and leaks detected and the daily meter readings mean that any anomalies in consumption are identified immediately. Water is now being treated as the precious resource it is and further reductions are expected in the coming year.

7.6. Local and sustainable food

	2020 Target	Baseline	2015 Performance
LSF1	3 new local food lines a year	2012: 40% from local ward (<25km), 2013: almost 100% from region (<250km)	New lines introduced – pork and teas
LSF2	All fish to be sustainably farmed or harvested	2013: no red list	'Sustainable Seafood Consortium' established
LSF3	Progressive improvement in the balance of the staff diet	2011: food prepared to meet cultural norms	Meat free meals, increase in vegetables

7.6.1. Key activities in 2015

In early 2015 the One Planet Sustainability Integrator (Beverly Burden) and the Executive Chef (Frank Louw) visited Dar fish market to get a first-hand view of how sustainable fishing was being addressed. Unfortunately the situation was very poor with dynamite fishing being a real issue. Singita is a very small purchaser in the context of the Dar fish market with very little leverage, but is determined to raise awareness of this issue, and has:

- Reiterated to the supplier the need to purchase the designated species and make the visual checks to ensure that the fish has been legally caught,
- Wrote a report on the visit and disseminated it to the local tourist industry
- Supported the establishment of a local 'Sustainable Seafood Consortium' aiming to link tourism stakeholders and local marine conservation NGOs to try and tackle this issue.

Progress has been restricted by a lack of local NGO capacity, but this is an important step in helping to raise awareness of the state of the fishing industry around Dar-es-Salaam.

Additional activities include:

- Securing of several new local lines of produce; a local butcher (Mr Lokisale) in Arusha for all pork products and only local teas are provided to guests.
- Engagement with staff over food and health, particularly meat consumption, continued throughout the year.
- Sales by the local farmers cooperative (GHOMACOS) to Singita increased 10% (in Shillings)
- Singita Grumeti Fund distributed 87 beehives to seven groups in 2015. Each recipient paid 36% of the total cost of the beehive to ensure commitment to the project. The project also has a beneficial impact on forest cover as the bees keep people gathering wood and elephants out of the area allowing the forest to rejuvenate.

7.6.2. Plans for 2016

The main focus is on developing the Sustainable Seafood Consortium and the incremental increase in local food and a healthier diet for staff.

7.6.3. Summary

Food is responsible for a large part of an individual's carbon or ecological footprint (about 20%), and meat consumption is a major factor in this. Singita Grumeti continues to encourage and enable staff to shift to a healthier and more sustainable diet, in a culture where meat consumption is seen as an important status symbol. The proactive approach to sustainable seafood is excellent to see.

7.7. Sustainable materials

	2020 Target	Baseline	2015 Performance
SM1	Imports reduced – 3 new local/sustainable non-food products a year	Not Applicable	e.g. trailers and tents
SM2	Rehabilitation of quarries and murrum 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	Review of Kilima Lodge to be undertaken

7.7.1. Key activities and successes in 2015

- The environmental committee continues to operate to maximise coordination across the project
- A natural resources survey has been undertaken, the general conclusions of which were:
 - The local environmental impacts of resource extraction are generally small
 - The Environmental Committee should state definitively the goal of the tourism operations and their full scope
 - While extraction was generally well managed, some improvements could be made in extraction of materials – guidelines were developed
- Sisal stems (a waste product) widely used across the property as a more sustainable construction material than the use of Grewia (a local shrub) and will be used to build the fence around the PV at Sabora
- Local materials and businesses continue to be supported – such as local manufacture of trailers and a new canvas business for tents
- Engagement over natural resource extraction and rehabilitation with local suppliers

7.7.2. Plans for 2016

- Terms for the extraction and rehabilitation of natural resources (e.g. stone and sand) will be included in supplier contracts
- Guidance on the recommended infrastructure footprint of Sasakwa Hill to be developed
- As part of the Environmental Committee a "Conservation Court" will be established to review environmental transgressions – e.g. driving off-road after heavy rains
- Review of the construction and operational performance of Kilima Lodge to be undertaken (see 8.3)

7.7.3. Summary

The natural resources survey undertaken has shown that the impact on the local environment of construction at Singita Grumeti is relatively small and well managed. Nonetheless improvements can be made and measures are being put in place to require suppliers to commit to rehabilitation of extraction sites. Initial analysis of the construction of Kilima Lodge has highlighted the embodied carbon impact of its construction; lessons will be learnt from that.

7.8. Sustainable transport

	2020 Target	Baseline	2015 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 : 459,915 litres (388,782 litres – excluding KL), Excluding WM: 347,725 litres (276,594 excluding KL)
ST2	50% increase in fuel efficiency of wildlife management activities.	2014: Fuel = 8.65% of total WM budget	Fuel = 6.2% of turnover, 15% reduction in use compared to 2013
ST3	10% reduction in local air cargo emissions	2013: 71,650 litres, 2014: 39,100	2015: 23,000 litres, >2/3 rd reduction
ST4	50% of guests offsetting or using a low-carbon air carrier	2011: no monitoring of this	Own project put on hold

The overarching target remains a 50% reduction in transport emissions, though for monitoring purposes it is useful to split this into the targets of 25% reduction through management and 25% through efficient vehicles. Also the indicator for Wildlife Management of 'fuel as percent of budget' may also need to be changed as it is as sensitive to fuel price changes as it is to reductions in fuel use.

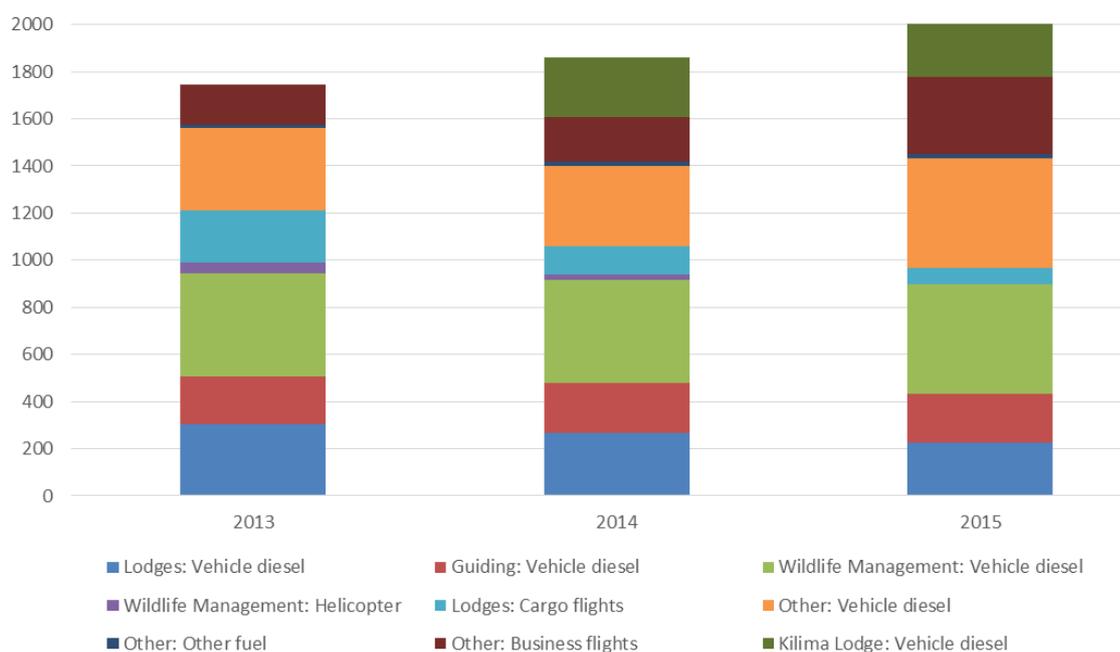


Figure 5: Transport carbon footprint (Tonnes of CO2eq)

Transport continues to be the most challenging sustainability issue at Singita Serengeti and in 2015 vehicle diesel use accounted for over 1/3rd of the total carbon footprint. Key points to note are:

- There has been a 5% increase in the total carbon footprint of transport from 2013 if the direct emissions from Kilima Lodge construction are excluded (see Figure 5) but this is driven by better gathering of flight data, without this the change from 2014 is essentially zero.
- There have been the successes such as a about a 25% reduction in consumption in supplying the lodges.
- The increase in 'other-vehicle diesel' is most likely due to increased activity due to the construction of Kilima Lodge.

- There has been a significant reduction in cargo flight emissions as Grumeti Air has eliminated 'dead legs' by carrying some passengers, who previously would have travelled with a separate airline. Although Grumeti Air's total fuel use remains approximately stable there will be a global reduction in carbon emissions as this change has reduced the number of flights from other airlines into Singita Grumeti. Nonetheless going forward both cargo and passenger fuel will be measured and reported.

New initiatives have been started in 2015, and more are planned for 2016. It is hopeful that these initiatives can contribute to a 25% like for like reduction (e.g. excluding increases due to major construction projects). Yet it is clear that without a significant improvement in the efficiency of vehicles, the 50% overall reduction is not going to be achievable, and currently the penetration of these vehicles into the market in rural Tanzania has been essentially non-existent.

7.8.1. Key activities and successes in 2015

- The Singita Grumeti Fund reduced its vehicle fleet by four vehicles, including the Managing Director swapping his Land Cruiser for a mountain bike!
- A shuttle bus service for the hill has been set up and started
- There has been some consolidation of intra-departmental journeys
- Continued inter-departmental coordination to promote efficient logistics, particularly between the permanent camps at Faru Faru and Sabora

7.8.2. Plans for 2016

A new Assistant Estate Manager will start in 2016 (April) who will take on the responsibility of monitoring fuel use and establishing strategies to reduce consumption. Further initiatives include:

- Wildlife management will reduce fuel allowance with the aim of *increasing* effectiveness by increasing the time scouts spend on patrol
- The shuttle bus service to be expanded
- Potential establishment of a property-wide 'courier' service
- At least one staff vehicle to be replaced by a bike
- Trailers to reduce the number of trips (e.g. to airstrip or Explore Camp)
- Investigation of the practicalities of electric or hybrid vehicles

Additionally improved monitoring will allow reduction targets to be set, with each department being expected to reduce consumption by 10%.

7.8.3. Summary

There has been some progress in 2015, though this has been restricted by a number of factors including; staff changes, lack of good data for tracking performance and absence of a clear target for each department. The recruitment of a staff member with a responsibility to focus on transport will help deliver the opportunities that have been identified. Nonetheless sustainable transport in a region dependent on all-terrain vehicles, which are integral to both the guest safaris and wildlife conservation is challenging. While a 25% 'like for like' fuel use is achievable, without the arrival of more efficient vehicles, hybrid or electric, in Tanzania a 50% reduction will not be achieved.

7.9. Zero waste

	2020 Target	Baseline	Estimated 2015 performance
ZW1	90% reduction in plastic waste (from 2014)	2014: Average 775kg/month	Estimate 450kg/month 40% reduction
ZW2	10% reduction in other waste (from 2014)	2014: 3600kg plus 12,250kg food waste per month	Estimate: 2600 and 8000 kg/month – 30% reduction
ZW3	>90% recycling rate	2014: 65% of non-organic, (4,150kg/month)	Estimate 52% of non-organic waste (2,600kg/month)

Unfortunately during staff changes, data collection dropped off and although this was reinstated by the end of the year, there is incomplete data for the year. The data that has been collected shows a significant reduction in waste but this will be verified in the coming year.

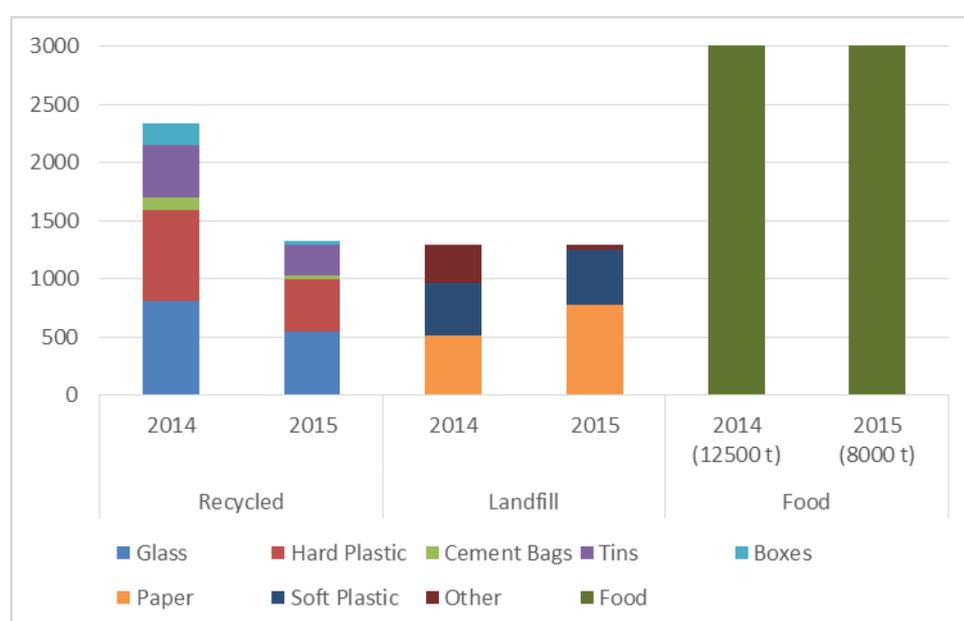


Figure 6: Average monthly waste generated and disposal route (except Kilima Lodge) in kg.

The data collected for the year shows that while food waste remains approximately $\frac{3}{4}$ of the total waste there has been a significant drop (>35%) in the quantity of food waste and monitoring in 2016 will help confirm this improvement. The quantity of waste for recycling fell by about 50%, due to the installation of water filters helping to reduce hard plastic and glass waste. Unfortunately the non-recycled waste has not been reduced and this will be a target for 2016.

While it is excellent that the food waste composter is taking a portion of the food waste this is not a practical solution for all the food waste, and so the strategy is to improve the management of the organic waste so as to ensure that it is all broken down aerobically, so that it can be recycled into compost.

There continues to be significant progress in the waste management infrastructure and procedures. And while the lapse in data monitoring is disappointing the data available suggests that good progress is being made, though as ever the isolated and rural location means that recycling will always be a challenge, and will require ongoing attention.

7.9.1. Key activities and successes in 2015

- Reuse and recycling remained in place for all materials, though the recycling route has changed from last year in some cases, specifically:
 - Hard plastic bottles are collected by a local milk enterprise for reuse
 - Glass is stored for crushing, probably to be used in construction
- The installation of the water filtration equipment led to 50% reduction in bottled water use by guests compared to 2011, and hard plastic waste reduced by 40%
- While data collection has been incomplete, total waste generation has been reduced by 30%, this will be tracked accurately in 2016
- Kilima Lodge achieved approximately 75% waste recycling rate throughout construction
- The food composter has continued to operate and create high quality compost
- Final Singita Grumeti Fund scout camp partially constructed with glass form crushed bottles as opposed to sand
- Installation of water filtration equipment accessible to staff

7.9.2. Plans for 2016

- Improved disposal and composting of food waste through better management, potentially incorporating all paper waste
- Installation of facilities (bottles, filters) to reduce, and ideally eliminate, use of bottled water by staff
- Ensure 100% data collection

7.9.3. Summary

Waste management at Singita Serengeti continues to improve, and respond to the ever changing opportunities for recycling. There are still areas that can be improved but these will be addressed in 2016.

7.10. Zero carbon

	2020 Target	Baselines	2015 Performance
ZC1	Reduce building energy use by 30% from 2011 (Target: 4500MWh)	2011: 6428 MWh 2013: 6321 MWh	6069MWh, 5909MWh excluding Kilima Lodge Reduced 10% compared to 2011 exclud. Kilima
ZC2	100% renewable energy	2011/2013: minimal % of electricity supply	> 100kW of PV installed

There has been a small reduction in the total building energy use from 2014 to 2015, and the reduction over the baseline is over 5%. This is not quite the level of savings expected and is due to the significant increase in the number of people living on Sasakwa Hill at the end of 2015 to complete the construction of Kilima Lodge. On the other hand, over 100kW of photovoltaics were installed over the year, with another 130W to go online shortly.

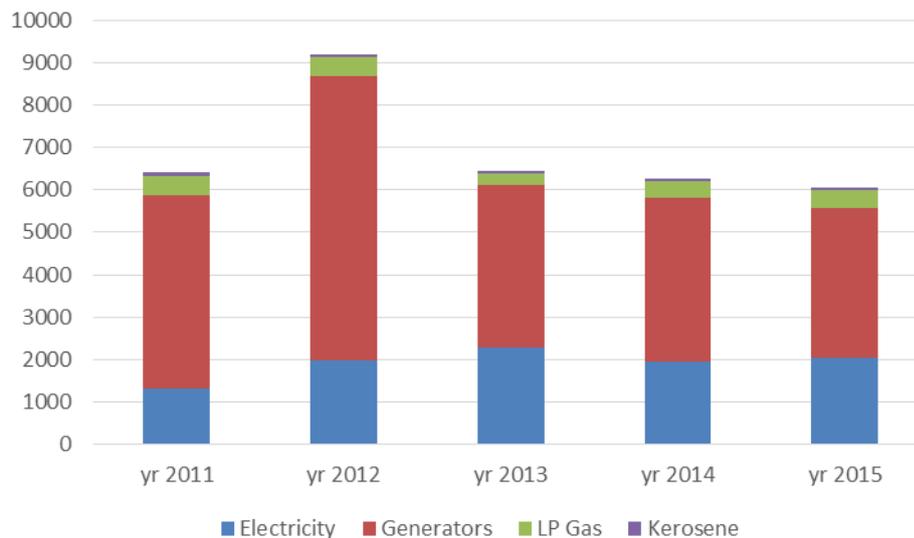


Figure 7: Total building energy consumption (MWh) for 2011-2015.

7.10.1. Key activities and successes in 2015

- Fuel consumption at Faru Faru was nearly 40% less than 2013 prior to the energy upgrade
- Installations of photovoltaics
 - Mara River: 18kWp with 86.4kWh battery bank
 - 84.5 kWp installed for Kilima Lodge. This PV will significantly exceed the annual consumption of Kilima Lodge and reduce the total electricity consumption by up to 5%
- Sabora Tented Camp had solar thermal hot water installed and inverter air conditioning units as preparation for a switch from diesel generators to PV
- 240 [Bboxx's](#) provided with an interest free loan offer to staff

7.10.2. Plans for 2016

- Commissioning of 130kW of PV at Sabora Tented Camp
- Upgrades to fridges at Sabora and Faru
- Energy reduction targets set for each location
- Full operation of live monitoring equipment with web-based platform for real-time viewing
- Solar thermal geysers at Manager's house
- Effective management of Sabora PV installation

7.10.3. Summary

It was hoped that 2015 would be the year that energy consumption started to come down, unfortunately this hasn't happened, probably due to the level of activity on the Hill due to the Kilima construction. Nonetheless there has been significant infrastructure upgrades and PV installations, making 2016 a key year in seeing these investments start to pay for themselves.

8. Case studies

8.1. Faru Faru Lodge

Faru Faru underwent a major refurbishment in 2014 and approximately 40% savings in diesel fuel for generators were being seen by the end of that year; 2015 represented the first complete year with the upgraded equipment. The major upgraded upgrades included:

- Installing solar thermal geysers (water heaters) in all rooms
- Replacing all air-conditioning units with efficient inverter technology
- Upgrading the generators to smaller modular units

The results have been impressive with a 38% reduction compared to 2013 and an over 30% reduction compared to the 2011-2013 average. There have been a number of challenges including; LED lights flickering, generators meeting maximum demand and geyser management to balance hot water availability and energy demand.

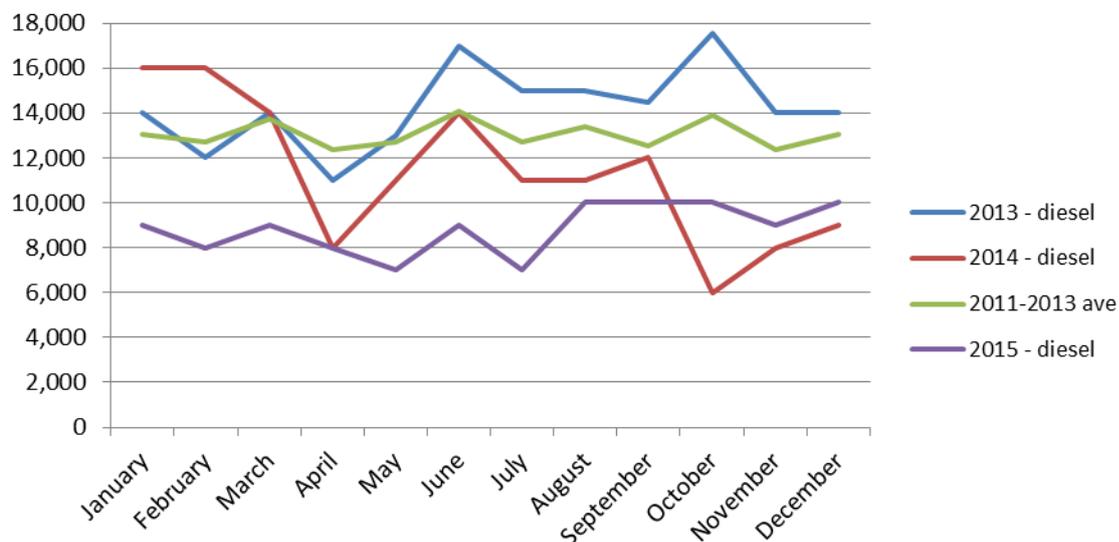


Figure 8; Diesel consumption (litres) at Faru Faru

8.2. Staff engagement

While changes in carbon footprint are easy to estimate, changes in behaviour are much harder to quantify. As a conservation project there is obviously already a level of awareness of environmental issues at Singita Grumeti, but the One Planet programme has helped to link more directly the behaviour and actions of individuals with the environment and conservation



One Planet Cook Off



Meat-free Monday



Health and Happiness run

. Key successes include:

- Normalising of a lower meat diet through initiatives like meat-free Monday, in what is a high meat consuming culture
- Wider uptake of exercise; bi-weekly group runs, football competition, annual Fun Run

- Attention to detail in sourcing of food and goods:
 - Commitment to increasing the local food
 - Heightened awareness of sustainable seafood, and a willingness to challenge suppliers
- Activities to ensure that One Planet is viewed in a positive light by staff.

Many of these successes have not been driven by the One Planet Programme, but by individuals with a passion for these issues who have been empowered by the One Planet Programme and given the opportunity to initiate activities.

8.3. Kilima Lodge

Kilima Lodge was completed on 21st December 2015 after approximately two years of construction. The lodge is a high-tech and high quality residence for a new conservation partner in a breath-taking location, with a level of isolation to challenge even the most straight-forward construction project! The building's operation will be integrated into Singita's One Planet Action Plan, but specific features include:

- 84.5kWp of PV installed to meet demand when the Lodge is occupied. When it is unoccupied any excess electricity generated is used at Singita Serengeti
- Greywater recycling on site
- Green roofs

The construction process has an impact both locally and globally. The energy embodied in the main construction materials and transport is being calculated but is in excess of 3,000t CO₂eq with cement accounting for about 55% of this. This information will be used to reduce the impact of future construction. The building is aiming for LEED certification and the documentation is being assembled. In terms of local impacts, all natural resource suppliers were required to follow rehabilitation procedures and all suppliers had to demonstrate that they abided by all of Tanzania's environmental and human rights law.

The table below outlines the major successes and impacts of the construction process. It is worth highlighting waste management with an estimated less than 15 tonnes of waste being generated; of this only 3.4 tonnes was not recycled. This was achieved through attention to detail and innovation with the cement bags being sent to a plant nursery for reuse as plant pots.

Principle	Construction success and impact
Health and Happiness	No major health and safety incidents
	The environmental induction helped empower people, creating a better relationship between management and employees.
Equity and Local Economy	Employed 150 people a day average (up to 300)
	Advanced construction led to capacity building of employees
	Number of female employees varies, has been as high as 25%
Culture and Community	Training provided to all staff
	Foremen visited the Environmental Education Centre
Land Use and Wildlife	All trees on site protected
Sustainable Water	Rainwater harvesting from site sheds and reuse on site
Local and Sustainable Food	Healthy food provided onsite to all staff
Sustainable Materials	Timber; reused timber and identification an local FSC supplier soon to be in operation
	Supply chain vetted as part of LEED process

	Heavy weight construction has significant embodied energy
	Natural resource suppliers required to follow rehabilitation procedures
Sustainable Transport	Monitoring of fuel use: 150 kl of fuel, 485 tCO ₂ eq
Zero Waste	15 tonnes of construction waste, of this 75% was recycled, non-recycled waste mostly paper and soft plastic
Zero carbon	Monitoring of fuel use, approximately 30 kl of fuel used – 90 tonnes CO ₂ eq

Figure 9: Summary of successes and impacts of Kilima Lodge construction

9. Message from Katherine Cunliffe, Sustainability Technical advisor

In October of last year, I was fortunate to join Singita Grumeti and take over coordination of the One Planet programme. It has been incredible to witness how individuals across every department are acutely aware of the One Planet program and what we are striving to achieve together. It is inspiring to see how everyone at Singita Grumeti has such passion and commitment to making sustainable living a reality in this remote corner of Africa.

Because access to regular products and services that make 'green' living easier in developed countries are not available in rural Tanzania, Singita Grumeti continues to think outside of the box for ways to enhance its positive environmental impacts while minimizing its ecological footprint. Take for example our recycling centre. In most settings, it would be a simple task to recycle materials like glass and plastic with recycling trucks picking up the waste for you. But considering that the nearest 'recycling centre' is more than a day's drive away, creativity and innovation are essential. We come up with exciting ways to repurpose and reuse recyclable materials, such as crushing glass bottles to fill sand bags which were then used as 'bricks' in the construction of new scout patrol camps.

I've been equally amazed at the dedication and commitment the Singita Grumeti Fund and their scouts display in preserving and protecting this world-renowned natural wonder. From anti-poaching foot patrols that crisscross our 350,000 acre concessions to the control of invasive alien plant species, the Fund is having a remarkably positive impact on the Serengeti ecosystem. Paired with its dynamic community outreach programs, such as small and medium enterprise development and education, it is no wonder that many consider Grumeti to be one of the greatest conservation success stories in Africa.

While still relatively new to my role, I eagerly await the year ahead and look forward to overcoming the challenges that remain. I have no doubt that together we can continue to build upon our One Planet achievements, striving to make sustainability central to everything we do at Grumeti.