



"During this month, many goals were set and we are looking forward to achieving them" - Moses Amanyire

The New Nature Foundation strives to conserve wild animals and wild places through education, empowerment, and an emphasis on creative solutions that promote people living in harmony with nature.

Summary of Accomplishments, January - December 2017

Uganda:

44,597 men, women and children visited the five community Science Centers
28 nature films were shown to audiences averaging 288 people
12 workshops were conducted focusing on fuel efficiency and family planning
Over 255,000 eco-briquettes were manufactured
Eco-char production has doubled compared to last year
Over 66% of families randomly sampled are using efficient stoves
241 stoves were built, and families with efficient stoves use 36% less wood than those with traditional stoves
66.5% of people grow firewood at home

Vietnam:

The inaugural "Monkey Day" celebration hosted over 1,000 people
147 efficient stoves were built, and families with efficient stoves use 56% less wood than those with traditional hearths
45% of families surveyed are now using efficient stoves

Overall, NNF's programs engaged more than 59,600 citizens around Kibale, over 7,100 in Vietnam and saved more than 11.8 million pounds (5,345,400 kgs) of wood and 4,440 pounds of charcoal in 2017!

We hope you enjoy reading this report. If you have any questions or comments, please feel free to contact us at any time. **Thank you very**much for the vital role you are playing in saving wildlife habitats around the world!

*Quotes are from monthly reports written by Science Center Staff and from Monkey Day participants in Vietnam

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"I flabbergasted after reading about how big elephant it is!"

"Chimpanzees are endangered animals – Solutions: Respect all wildlife, plants and animals. Protect the forests of Uganda because they are the home of Chimpanzees. Least but not last protect our forests for the forthcoming generations so they can enjoy the gifts of nature" -Kabuleta John

ECO-BRIQUETTES

Achievements:

- In 2017, **255,825 eco-briquettes were produced:** 121,086 eco-char (carbonized) & 134,739 kuchumbricks (non-carbonized).
- The amount of eco-char produced has doubled in the last year, even with staffing reduced, thanks to an electric extruder. (See appendix I)
- Nearly \$600 in Eco-Char was sold in 2017, more than double 2016's sales.
- McLeod Russel Tea purchased nearly \$900 worth of kuchumbricks in 2017, the same amount as 2016, equating to 42,000 briquettes distributed to workers at their Kiko estate.
- **156 families** are now using non-carbonized briquettes, 56 of whom trade agricultural waste; **32,047 pounds (14,567 kgs) of waste** was traded for briquettes.
- In total, the briquettes produced in 2017 accounted for a savings of more than 71,142 pounds (32,337 kgs) of wood and an additional 4,440 pounds (2,018 kgs) of charcoal, much of which would have come from Kibale National Park.

Challenges:

 Farm waste trading is proving to be limited to people who live very close to the factory (with just one partner who has transport from farther away).
 Carrying the waste long distances is very difficult, so some families are sharing waste and assigning one person to bring a large amount for a number



- of households (decreasing the total number of families counted as participating in the program). One solution NNF will execute in 2018 is buying a motorized cart to assist with transport of waste and briquettes deeper into the villages.
- Finding a large customer base for eco-char in Fort Portal, to establish a steady flow of income, has continued to be challenging. Staff are making sure the product is always at top quality so that returning customers will help spread positive publicity about the eco-char. Staff are also attending more festivals and workshops to sell and promote the product. In 2018, NNF will start a charcoal curriculum at the two Science Centers that sell eco-char to further promote the product.
- The number of kuchumbricks produced has reduced as more focus is put towards continued attempts to make the eco-char a self-sustaining business. While NNF is maximizing efficiency with more complex machinery, the kuchumbrick trading portion of the program will never be self-sustaining.

In total, since inception in 2011, over 230 metric tons (506,000 lbs.) of wood and charcoal has been saved in close proximity to Kibale thanks to these briquettes.

While much of this wood would have come from unsustainable sources, the briquettes are carbon neutral, so in addition to protecting wildlife habitat, NNF's Eco-Char Initiative is helping us all by mitigating carbon emissions and climate change.



"The demand of stoves for families has been high, I tried to work according to my level best so we can achieve all our objectives."

EFFICIENT STOVES, WOOD USAGE & TREE PLANTING

Achievements:

- In 2017, community members built **241 stoves** with assistance from NNF staff. In total, NNF has assisted in building over **2,043 efficient stoves** since inception in 2006 (with even more made thanks to the project's influence see census findings, below).
- The annual survey showed that 66% of families in our target areas are using efficient stoves, up from 3.5% at inception. (appendixes II & III)
- Efficient stoves used **36% less wood** than traditional stoves. (appendix II)
- **66.5% of families across all target areas are growing firewood at home**, 36% of whom are growing the promoted leguminous species (up from 51.5% and 10.5%, respectively, at inception).
- In the pilot year (2006/07), 37.5% of people surveyed indicated that they were collecting wood inside Kibale; in 2017 that number is down to 13%. Additionally, the number of people who suggest collecting wood in the park as a viable solution for making ends meet has halved (appendix II).
- A complete census of four current target areas was conducted by Leah Rosenkrantz of Western University from June - August. Among other things, this data helped illuminate how many stoves have been built without assistance from NNF staff. See findings helow.
- Stove building also continued in Vietnam read more about that under the separate heading, below.



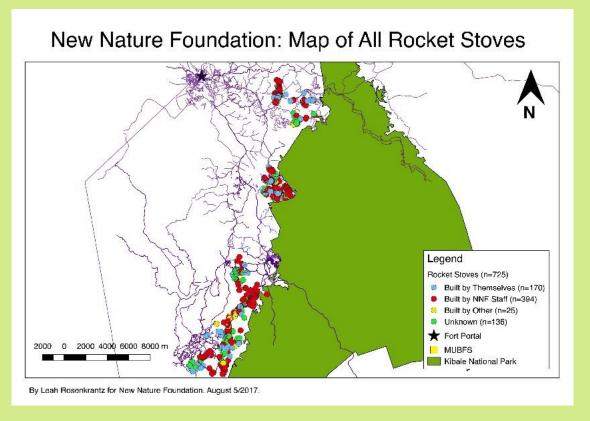
• In Makobyo, where the briquette factory is, the number of people who say it is a struggle to find enough firewood continues to decrease. 21% now say it is *not* a struggle to find firewood, an improvement from last year.

Challenges:

- In Nabweya, the most recently added target area, with no briquettes yet available, 100% still reply that it is a struggle to find firewood. (appendix II)
- While the complete census was extremely useful, we were not able to census the two target areas that had been phased out, which would have been very interesting to determine how many families there are still using stoves. Additionally, it would have been very nice to census areas in between our target areas, to see how stove building has spread to those areas without any input from NNF.
 Reprising the census and including these areas could be a wonderful project for a Masters or PhD student or zoo conservation scientist if you know of anyone interested in this type of work, please ask them to contact us!

Additional findings from the census:

- > Only 53% of those with stoves built them with help from NNF. In other words, the **project methodology is spreading without any help from our staff, as intended.** 25% of the stoves censused were built by the homeowners themselves after learning about the
 - design from friends and neighbors or at NNF museums and events, with no direct help from NNF staff. NNF has also mentored two local organizations in stove design, and stoves that they helped build account for 3% of the stoves censused. (For the remaining 19%, the person at home during the census did not know who built the stove, or no one was at home.)
- ➤ While NNF staff have assisted in building 2,043 stoves since project inception, the findings above suggest that a conservative estimate of the number of stoves built thanks to NNF's influence would be closer to 3,855.
- The census also revealed the sizes of our target areas, a detail that had been difficult to determine before counting each individual home. Kyanyawara, where NNF has been active since 2006, is the smallest of our current target areas, with 453 households. Kaswa, where NNF programs began in 2009, has 550 households.



- Isunga, another pilot areas from 2006, has 733 households, and Nabweya, a target area since 2012, has 1,156.
- > The findings also indicated that having a stove in Isunga and Nyabweya is directly correlated to how close the families live to the Science Centers (i.e., families that live closer to the Science Center are more likely to have stoves). This helps inform which areas will need more focus, funds or transport and workshops in 2018.
- The census found that some people who have yet to build a rocket stove are still benefitting from the design, by adding bricks to their traditional hearths in a "rocket stove-like" design. While these are not as efficient, they are better than traditional three-stone fires and demonstrate an interest in the design that will help focus extra concentration in 2018.

Calculations based on wood usage numbers from 2017's surveys and an assumption (based on previous research) that 85% of 3,855 stoves are still functional show that NNF's influence accounts for a savings of 32,440 pounds (14,745 kgs) of wood daily. This equates to over 11.8 million pounds (5.4 million kgs) of wood saved in 2017, much of which would have been cut within Kibale National Park.

Wood Extraction Survey:

The wood extraction research that began in 2013, funded by NNF and conducted by our partners in the Uganda Wildlife Authority, continued in 2017. We resumed data collection on the edge transects of *Kanyawara*, *Isunga*, *Nkingo and Nyabubare* in order to monitor wood extraction and establish trends. This is being done alongside an animal census, to link wood extraction with persistence of primates along forest edges. One disheartening bit of information from 2017's survey is that wood extraction has increased across all areas studied, both those where NNF is working and those we are not. Uganda's intense population growth is one of the reasons for this rise, and we continue to address this issue in various ways. The research will continue and is contributing to a long-term data set detailing changes in human encroachment into Kibale.



"This month has been generally good to me and also as far as teaching the community is concerned. As usual people have been attending the centers in extremely large number and asking some questions related to science like: Why do trees change color? Why is fruit sweet and juicy?" -Amos Tukahumura

SCIENCE CENTERS, VIDEO SHOWS & TRAINING WORKSHOPS

Achievements:

- Total attendance at all five Science Centers was **44,597 people in 2017**, **the highest since inception in 2006** and a 66% increase from 2016. In 2006, 5,752 people attended NNF's first Science Center.
- In Fort Portal alone, the only urban Science Center hosted 25,574 people.
- All five Science Centers operate with combined costs of **less than \$40,000** per year. (see Return on Investment section, below)
- The Isunga Science Center was moved to a busier trading center to accommodate larger audiences. In the last three months of the year, Isunga hosted 500 more visitors in the new location that it did in the same time frame in 2016.
- 12 workshops/events were attended by over 3,500 people, focusing on fuel efficiency, proper stove usage and family planning more than triple last year's attendance in this category.
- NNF hosted our first clean-up day in Fort Portal and the second in Nabweya village. Fort Portal's was supported by the Mayor, with trash trucks provided to remove the waste that volunteers picked up from the streets.
- Science Center staff received intensive training on curriculum development from two teachers, Brett and Bex Evans, who came from the Lanesend Primary School, Isle of Wight, UK, and stayed for 8 months.
- 28 nature films were shown to audiences averaging 288 people.

Please share our <u>amazon wish list</u> so that we can continue to fill the Science Centers with amazing things!

http://www.amazon.com/gp/registry/wedding/1M88FJTAH8T5G





Challenges:

• The Science Centers have become training institutions for other professions in the sciences. That is to say, in the past couple years NNF has lost some of our best staff to other prestigious organizations, like the Kibale Chimpanzee Project, eco-tourism lodges, and schools. While this is wonderful for the employees, and we are extremely proud of them, it poses a challenge for maintaining daily operations. Still, the changes being made by these individuals makes it all worthwhile. From former staff member Musabe Bashir: "Hi Abooki & Amooti. Once more I thank you for everything you did for me all that long. I had a great time with you. I can't deny to say this: I "Am" what I am now because of Science Center and am very proud of you. It's so sad that am leaving. Again, what I can promise you is that I have not left for good, whenever I find time I can spend it with you. Thank you. Yours, Bashir"

Staff Training:

Left: Staff after receiving certificates for trekking gorillas.

The annual staff training workshop was held at Bwindi Impenetrable National Park, home to half of the world's critically endangered mountain gorillas. Fourteen staff took the journey south to learn first-hand about different landscapes and habitats and see the differences between chimpanzees and gorillas. NNF staff spoke with community members and wardens about threats to mountain gorillas and what efforts need to take place to ensure their survival. They will take this knowledge back to the Science Centers and be better informed when educating the public.

"I have given some of students work to do and people of the community loves it so that's why we receive more visitors. We are then encouraging them to plant trees to bring firewood very fast so we can preserve the environment and it can remain green." -Niwagaba Moses "During this month, I have taught much about elephant in Uganda and all over the world. The group is headed by the old elephant called matriarch which is well experienced for security purposes." -Tulinawe Pakarasio

CONSERVATION COMPETITIONS

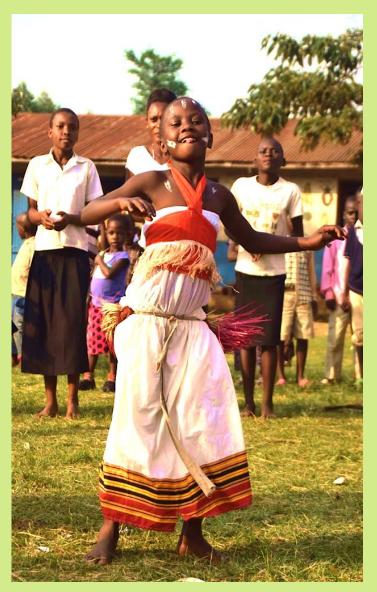
- The theme for the eighth annual Kibale Conservation Competitions was "Climate Change What Is It and What Can We Do About It?"
- Nearly 2,500 people attended four competitions in NNF's four target areas, exceeding, yet again, our highest attendance since project inception. The event has become a highlight of the month for many citizens, highly anticipated and very much enjoyed. (2017 also saw the first-ever conservation competition in Northern Vietnam read more under the Vietnam heading, below.)

Activities included:

- o Listing all the mammals in Kibale
- o Animal identification games
- o Draw a giant forest hog contest
- Create an animal from waste products contest
- Efficient Stove Build-off: Racing from one end of the field to the other, carrying the twenty bricks needed for a stove and then building one
- Strong person competition: comparing wood needed for a traditional stove versus an efficient stove while running an obstacle course!
- o Dance and drama (with a focus on climate change) from 14 groups
- Fuel Efficient Bean Cook-off: the winners averaged just slightly more than 1 kg of wood to cook 1 kg of scrumptious beans – truly an amazing demonstration of the capabilities of the rocket stove. (One winner used only half a kilo!)

AWARD

In September, NNF was awarded a trophy by the Rwenzori Tourism Cluster in recognition of our conservation work.



"All organisms on the earth, including TSNMs, have the right to survive, so we, human, need to protect them." -Nguyen Minh Chien

VIETNAM

Achievements:

- 45% of families surveyed have an efficient stove up from 36% in 2016.
- Surveys revealed that the average family with a rocket stove uses 15.3 kg (33.7 lbs.) of wood daily, **56% less** than those with traditional hearths, to cook for both humans and livestock. (The families self-reported a savings of about ½, so their estimates are right on!)
- 147 efficient stoves were built with families in 12 hamlets in Tung Ba, Yen Dinh and Minh Son communes. This is an increase of

57% over stoves built last year, thanks to several new "stove ambassadors".

• The program is now offering three different stove types and educating

people about the benefits of each.

• The average family in our target areas has 4.2 people and 6 livestock, all of whom are cooked for multiple times each day. The different stove types offered are good for various types of cooking.

- Two conservation events hosting a total of over 1,500 people were held in Tung Ba to better connect families with the conservation of the Tonkin Snub-nosed Monkey (TSNM).
- The alternative livelihood program continues to be well received by communities - many beautiful oneof-a-kind crafts were sold to support the project at NNF lectures.



Activities at the two conservation events in Tung Ba included:

- o Writing a promise of conservation on the "dream tree"
- o A race to gather materials needed for an efficient stove
- Draw a Tonkin Snub Nosed Monkey in its habitat
- o Create flora and fauna from waste materials
- Strong person competition: A race comparing the wood needed for a traditional hearth versus an efficient stove by carrying large amounts and then small amounts of wood through the obstacle course!
- o Dance, song and drama performances with a focus on the Tonkin Snub-nosed Monkey
- Fuel Efficient Stove Demonstration: Special foods were prepared on two rocket stoves to demonstrate their cooking ability and the amount of wood needed to cook
- o Ms. Rocket Stove: Women competed in knowledge and beauty portions to win the honor of being a stove ambassador for a year

"The earth is very small, but there are many animal species and human to live. TSNMs are a unique animal species, we have to protect them instead of hunting them."

-Nguyen Ngoc Chan

Tremendous thanks to the Denver Zoo for their partnership in accomplishing all of the objectives in Vietnam!



"I have been teaching about relationship between chimpanzees and bonobos. The way how they behave, the way how they eat, and not only that, how they make the nest, and it was so great."

PUBLICITY & PARTNERSHIPS

On a trip to Northern California in October, Oakland Zoo's conservation department hosted an evening event for NNF, and the directors also lectured at the Fresno Chafee Zoo, Sacramento Zoo, and participated in the Wildlife Conservation Network's Fall Expo. The directors presented at the Conservation Optimism Summit in the UK and attended the inaugural meeting of the African Primatological Society in Ivory Coast to participate in the early stages of a continent-wide Red Colobus Conservation Action Plan. Columbus Zoo visited NNF in Uganda in December.

An article about the work was published in the October 2017 issue of AZA's Connect Magazine, available on the "Updates & Reports" section of NewNatureFoundation.org. NNF's photos have also been used in various articles online regarding deforestation and efficient stoves.

NNF staff set up a display and had cooking demonstrations at the UNITE for the Environment Earth Day celebration on Kibale's south-east boundary.

NNF partnered with Western University of Ontario for a stove census, the Uganda Wildlife Authority for a wood extraction census, and the International School of Uganda for student research projects.

We are thrilled to continue supporting these partnerships that help fulfill NNF's mission of empowering people to live in harmony with nature.

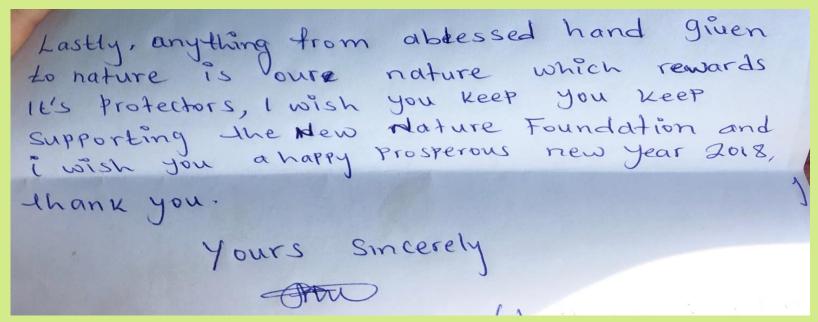


Photo courtesy of Amy Gotliffe, Oakland Zoo

"This month I made some research on why people go to the park and they told me they go for honey, medicine and firewood. I taught them to avoid going into the park by planting trees, planting medicinal plants at home, and making hives outside of the forest." - Patrick Abimanyire

RETURN on INVESTMENT

2017 saw the greatest amount of community engagement in NNF's twelve years of activity, with more than 66,700 interactions with community members! This is nearly double the number of people engaged last year, and with \$107,065 spent in 2017, **equates to just \$1.60 per interaction**, a figure we are extremely proud of. "Interaction" is defined here as a visit to a Science Center, participating in a workshop or competition, viewing a video, etc. Consider that the budget reported here pays the salaries of our American President/Project Director, our Ugandan Manager and more than 30 other staff in Uganda; vehicle transport & maintenance; international travel; volunteer stipends; all materials and supplies; rent at 5 Science Centers, and more. We think you'll agree that your funds are being spent with frugality and with a high degree of return on investment. Thank you for your continued patronage, which is what makes this important work possible.



A portion of a thank you note to the Columbus Zoo & Aquarium

Thank You All!

Private Donors:

Alexis Offen & Aaron Beim

Amy Gotliffe

Ann Marie & Jason Gage

Annemarie Hasain

Avra Lorrimer

Bette & Jon Perlman

Chuck X. Block

Debbie & Seth Wright

Elana Levites Agababa

Elliot and Susan Hollander

Ellyn & Steven Stern

Emily Greenberg

Jan Robbins & Gary Woodward

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Julie Zakroff

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Margot Marsh Biodiversity Fund

New Mexico BioPark Society

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Philadelphia Zoo

Reid Park Zoo Teen Volunteers

Roger Williams Park Zoo

Sacramento Zoo

San Antonio Zoo

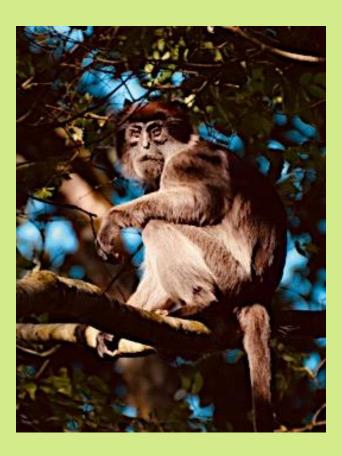
SeaWorld Busch Gardens Conservation Fund

Sonata Aesthetics

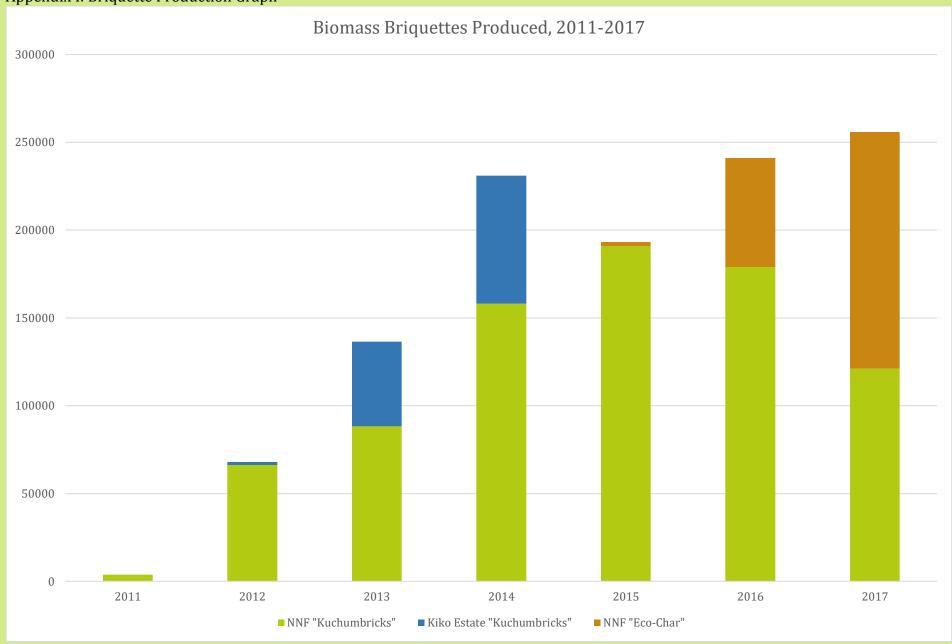
Taronga Conservation Society Australia

The International Foundation

ZooParc de Beauval



Appendix I: Briquette Production Graph



Appendix II: Survey Tables

	Baseline Data	Most Recent Data
	All Areas	All Areas
	(2006, Pilot areas; 2007, EPI areas;	(2017)
	2008, EPII areas)	
Is it a struggle to obtain firewood?	89% YES	85% YES
How do you propose to lessen the	58% plant trees	59% plant trees
struggle?	7% efficient stove	21.5% efficient stove
	7% cut wood in KNP	3.5% cut wood in KNP
		2.5% use briquettes
Do you grow trees at home?	51.5% YES	66.5% YES
	(10.5% of whom grew <i>S. sesban</i>)	(36% of whom grow promoted leguminous species)
Traditional or efficient stove?	4.5% used	66% use
	efficient stoves	efficient stoves
Average Wood Use	1.34 heaps per day	.96 heaps per day
		Efficient stove uses 36% less than traditional
		.81 eff. 1.26 trad.
Firewood collected in the park?	30.5% YES	13% YES
	Baseline Data	Most Recent Data
	Pilot Year Areas	Pilot Year Areas
	(2006)	(2017)
Is it a struggle to obtain firewood?	93.5% YES	89.5% YES
How do you propose to lessen the	75% plant trees	52% plant trees
struggle?	0.5% efficient stove	21.5% efficient stove
	12% cut wood in KNP	3% cut wood in KNP
		5% use briquettes
Do you grow trees at home?	55% YES	70.5% YES
	(8.5% of whom grew S. sesban)	(38% of whom grow promoted leguminous species)
Traditional or efficient stove?	3.5% used	66.5% use
	efficient stoves	efficient stoves
Average Wood Use	1.11 heaps per day	0.94 heaps per day
		Efficient uses 34% less wood than traditional
		0.81 eff. 1.22 trad.
Firewood collected in the park?	37% YES	10.5% YES

	Baseline Data Expansion Phase I Areas	Most Recent Data Expansion Phase I Areas*
	(2007)	(2017)
Is it a struggle to obtain firewood?	92% YES	62% YES
How do you propose to lessen the	49% plant trees	75% plant trees
struggle?	7.5% efficient stove	16% efficient stove
	8% cut wood in KNP	0% cut wood in KNP
Do you grow trees at home?	56% yes	50% yes
	(20% of whom grew S. sesban)	(31% of whom grow promoted leguminous species)
Traditional or efficient stove?	2.5% used	70% use
	efficient stoves	efficient stoves
Average Wood Use	1.43 heaps per day	0.66 heaps per day
		Efficient uses 32% less wood than traditional
		0.58 eff. 0.85 trad.
Firewood collected in the park?	23% YES	24% YES

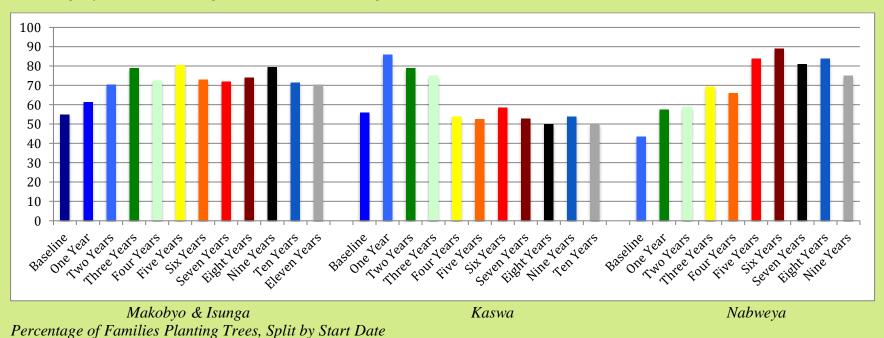
	Baseline Data Expansion Phase II Areas	Most Recent Data Expansion Phase II Areas*
	(2008)	(2017)
Is it a struggle to obtain firewood?	81.5% YES	100% YES
How do you propose to lessen the	49% plant trees	56% plant trees
struggle?	14% efficient stove	27% efficient stove
	1.5% cut wood in KNP	8% cut wood in KNP
Do you grow trees at home?	43.5% YES	75% YES
	(3% of whom grew <i>S. sesban</i>)	(37% of whom grow promoted leguminous species)
Traditional or efficient stove?	8% used	62% use
	efficient stoves	efficient stoves
Average Wood Use	1.48 heaps per day	1.32 heaps per day
		Efficient uses % less wood than traditional
		1.05 eff. 1.76 trad.
Firewood collected in the park?	31.5% YES	7% YES

^{*}One of the Expansion Phase I areas was phased out in 2014; one of the Expansion Phase II areas was phased out in 2013. The above figures reflect only target areas where NNF is still active. The phased-out areas will be surveyed periodically in the future to determine how project activities remain ongoing after cessation of active work but are not included in the current analysis. (The same is true on the graphs below.)

Appendix III: Survey Graphs

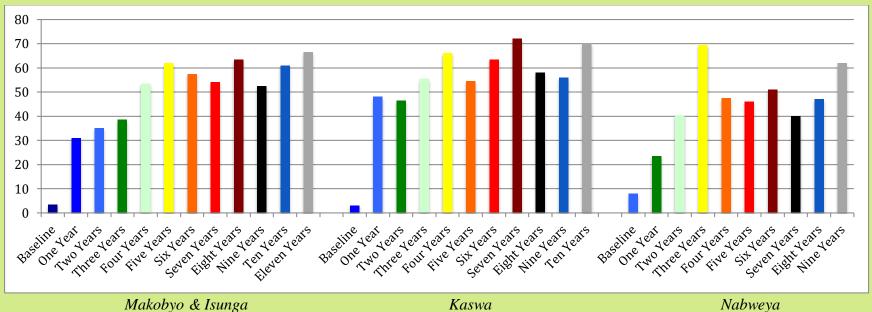


Percentage of Families Planting Trees, Combined Average





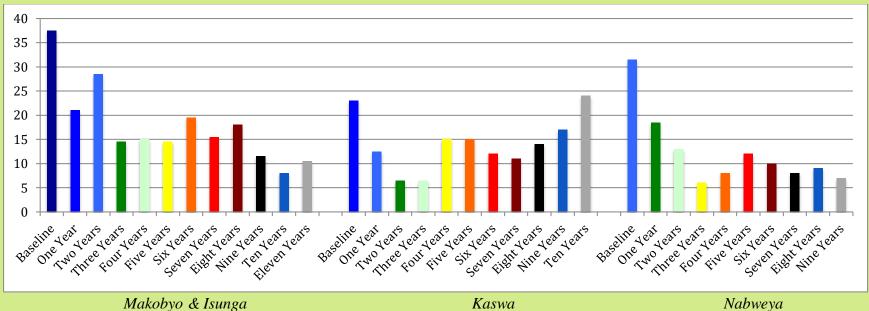
Percentage of Families Using Efficient Stoves, Combined Average



Percentage of Families Using Efficient Stoves, Split by Start Date



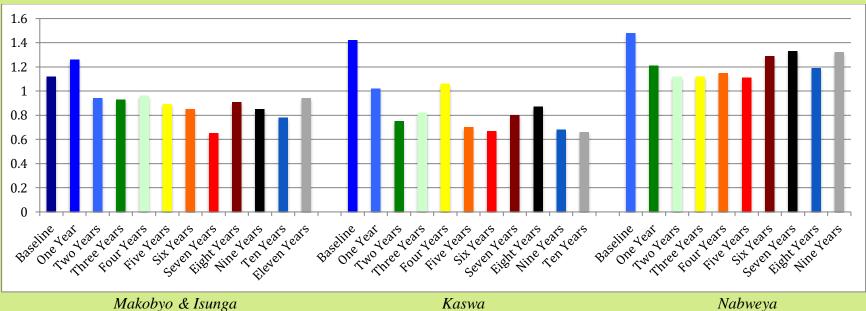
Percentage of Families Collecting Wood from Kibale, Combined Average



Percentage of Families Collecting Wood from Kibale, Split by Start Date

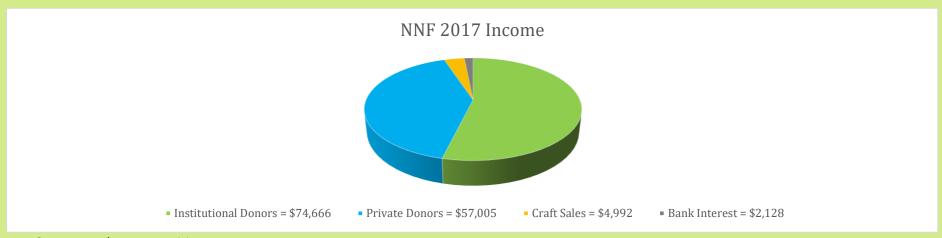


Amount of Wood Used Per Family Daily (in Heaps), Combined Average

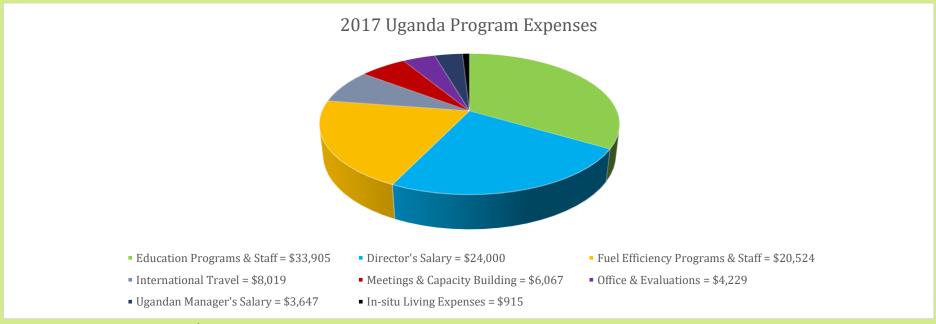


Makobyo & Isunga Kaswa Amount of Wood Used Daily Per Family Daily (in Heaps), Split by Start Date

Appendix IV: Income & Expense Graphs



Total Income: \$138,791.55



Uganda Program Expenses: \$101,305.62

Vietnam Program Expenses: \$5,759.74

Appendix V: Budget Detail

Total Spent
\$24,000
\$3,647.10
\$10,242.79
\$1,082.46
\$7,250.17
\$499.63
\$3,855.79
\$377.57
\$9,043.45
\$666.67
\$772.62
\$279.27
\$1,877.26
\$1,752.81
\$5,332.52
\$3,866.03
\$350.00
\$5,787.64
\$514.71
\$2,275.36
\$8,898.00
\$8,018.67
\$915.25
\$101,305.62

TOTAL VIETNAM EXPENSES \$5,759.74
Total 2017 Spent \$107,065.36