

PureMadi

The intersection of water, societal, and human health disciplines



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Announcing PureMadi 4! The event is returning to Alumni Hall on Friday, February 6, 2015.



PureMadi and Rotary Teaming Up to Bring Filters to Rural Villages



As part of a \$38,000 grant from Rotary International, PureMadi has been partnering with the Rotary Clubs in Louis Trichardt (South Africa), Kernersville (North Carolina), and Rockingham County (Virginia) to advance the Mukondeni Pottery Cooperative and Filter Factory in Mashamba, South Africa. The grant provides the funds for improving factory facilities, further training and supervising for the potters, creating marketing and promotional facilities, and purchasing and distributing over 1,100 filters. PureMadi, as the implementing partner, has made great progress over the first year of this project.

The potters have manufactured about 700 filters and several hundred have already been distributed to the villages of

Mashamba and Tshibvumo. This means that about 4000 people will have safe drinking water for the next 3-4 years. As part of this filter order, PureMadi has placed filters in every classroom of the Tshibvumo Primary School and coupled water, sanitation, and health education with the filter introduction. These children will go home and tell their parents about their filtered water at school. The Rotary grant has allowed us to hire Boas Thangoane, who is introduced in another story in this newsletter. Mr. Thangoane, who has a BS degree from the University of Venda and is a resident of Mashamba, first helped us construct our filter factory back in 2011. He has been instrumental in advancing filter production and facilitating communication between PureMadi and the Mukondeni potters. ...Continued on page 2.





PureMadi + Rotary Teaming Up continued...



We have extensively tested the filters produced by the Mukondeni potters in 50 rural households in Limpopo Province. Even after a year of daily use, the filters are highly effective at removing pathogenic microorganisms from household drinking water. Coliform bacteria and E. coli in water samples are being reduced by more than 90% overall.

Nicola Bulled (UVA), Geoff Winegar (UC Berkeley), and Kara Poppe (University of Northern Iowa) delivered ceramic water filters to all the classrooms at the Tshibvumo Primary School. Do you think the kids are excited?

Packaging materials have been developed for our filters to facilitate transport to retail stores and we have designed and tested (in focus groups) instructional booklets to explain how to use and maintain each filter. We are currently revising our instructional booklets to reflect feedback from the focus groups.

Finally, we are making structural improvements to the factory, including improving the perimeter fence for security, providing improvements in electrical service for the kiln, and paving the filter factory floor and improving drainage during the rainy season.

Check out PureMadi's [new website](http://www.puremadi.org) at www.puremadi.org. You can learn more about our new filter factory as well as sign up for our emailing list!

Welcome Boas!

PureMadi is proud to introduce Boas Thangoane Murauha as our manager at the Mukondeni filter factory! Even before this past May when Boas officially joined the team, he was involved in the factory's growth since its earliest construction stages back in 2011. Boas was born and raised in Mashamba and has an agriculture

degree from UNIVEN. He is an active member within the larger Mashamba community and knows many of the co-op women personally. We are excited to have him as a liaison, facilitating our stateside efforts with those on the ground in South Africa. He has already made great strides to improve communication and has attended many workshops in South Africa to secure future sales.



PureMadi 3 Success!

PureMadi 3 was held on February 7, 2014 in the Jefferson Ballroom of Alumni Hall on the Grounds of the University of Virginia. The event was PureMadi's third consecutive sold-out celebration with over 200 attendees. All of PureMadi's board members were in attendance, along with the newly formalized group of governing officers. The event also brought Mr. Mbulaheni Lucas Mavhungu to Charlottesville. Better known as "Chief Lucas", he is the reigning chief of the village of Tshibvumo in Limpopo Province, South Africa. PureMadi has developed a strong relationship with him and we are currently working to provide every family in his village with a ceramic filter. We have already delivered more than

100 filters, including placing one in every classroom of the Tshibvumo Primary School.

The event began with an informal cocktail hour with music by Hoos in Treble, the all-women UVA student a cappella singing group, featuring PureMadi's own Thy Nguyen. They ran through more than a dozen pop songs



Chief Lucas poses with the PureMadi Officers during PureMadi 3.

while guests enjoyed appetizers, cocktails, and browsing of silent auction items. The technical program was kicked off by PureMadi President Rebecca Kelly, and was highlighted by a heartfelt speech by Chief Lucas. The program closed with an announcement by Theresa Hackett and Sydney Schrider about future plans for PureMadi in Hammanskraal and with the "Filter Game". The band 180 kicked off the post-dinner celebration as bidding on silent auction items heated up. Hoos in Treble joined 180 for a rousing rendition of Adele's "Rolling in the Deep", and everyone went home inspired by past successes and future challenges. The event raised more than \$20,000 for PureMadi's work in South Africa. PureMadi will return to Alumni Hall on Friday, February 6, 2015! We are anticipating another sold-out event so be sure to get your tickets early at www.puremadi.org!

Building a New Filter Factory in Hammanskraal



PureMadi is excited to announce that we have made significant progress on the development of our second filter factory! Khulisa Social Solutions, a South African NGO that addresses social vulnerabilities and helps build up grass-root projects, will be PureMadi's community partner in this second factory. Over the course of the year, Khulisa project manager Zain Halle and PureMadi President Rebecca Kelly have entered into a Memorandum of Understanding for the two organizations as they develop the second factory. Khulisa plans to instigate marketing efforts in the Hammanskraal area once the factory is closer to completion.

Over the summer, Board Member Jim Smith, along with Officers Rebecca Kelly, Theresa Hackett and Sydney Schrider, selected a site location for the second factory in the Gauteng province

in the city of Hammanskraal. Permission to build a factory from the Tribal Offices of Hammanskraal was obtained and a land survey has been conducted. Rebecca, Theresa and Sydney were also able to meet with two future filter factory employees, Grace and Paulina. Grace and Paulina are very enthusiastic about the project and have high hopes

for what it will bring to the community. Grace and Paulina came to visit the Mukondeni Factory to meet the Mukondeni potters and learn about the filter making process. The women at Mukondeni also taught them about their traditional pottery.

We plan to put in a fence and borehole this winter with factory construction beginning in the spring. Erin Root, a UVA architecture student, also traveled to Hammanskraal this summer and met with local contractors to discuss the upcoming factory construction. Erin and UVA professor Anselmo Canfora are modifying their architectural design plans from their ReCOVER project to be implemented in Hammanskraal.

We are all very much looking forward to getting the second factory up and running!



MadiDrop Update



The MadiDrop, named after a South African word for water, *madi*, is a small ceramic tablet embedded with silver nanotechnology that purifies water at the household, or point-of-use level. The tablet is simply placed in a household water storage container, and through the slow release of silver, it disinfects the water, making it safe to drink. The MadiDrop, and its technology, are patent pending and have the potential to be disruptive and market-changing, providing hundreds of millions of people with a safe, simple to use, highly-effective, and very low-cost method for purifying water.

MadiDrop, P.B.C. is the manufacturer of the MadiDrop. MadiDrop, P.B.C. holds

an exclusive option-to-license agreement with the University of Virginia and is seeking funding to commercialize this technology.

At MadiDrop, P.B.C., we believe that every person should have access to safe drinking water. This vision drives and governs our conduct as a socially responsible, for-profit commercial entity, the products we develop and commercialize, and how we sell and distribute those products. Our mission at MadiDrop, P.B.C. is to design, develop, and manufacture affordable drinking-water treatment technologies to improve global health and quality of life. To support this goal, our company has been structured as a public benefit (B) corporation, where majority of profits will be reinvested in organizations sharing the same vision and mission of MadiDrop, P.B.C. As our sister organization, PureMadi is the primary

NGO MadiDrop, P.B.C. aims to work with to achieve this mission. MadiDrop, P.B.C. hopes to work with on-ground NGOs, such as PureMadi, to improve health, hygiene and sanitation through education, training, and sustainable point of use technologies.



MadiDrop prototype

Field Focus: Filter and MadiDrop Results



This past summer, Chloe Rento (ChE '16), Veronica Son (CEE '16), and Sydney Turner (CEE '15) traveled to South Africa to evaluate the effectiveness of PureMadi's water filter and the MadiDrop. This project was a continuation of a study done in the summer of 2013, in which the filters and MadiDrops were evaluated for efficacy in the villages of Mashamba and Tshibvumo in Limpopo Province.

In the summer of 2014, researchers returned to these 80 households to study the performance of the filter and MadiDrop after a year of use. Focus groups were also conducted with villagers in Tshibvumo to test the effectiveness of the instructional pamphlets that accompany the ceramic filter and MadiDrop.

Figure 1 shows data collected in the village of Tshibvumo and represents the average percent reduction in bacteria produced by the filters. Figure 2 compares the concentration of bacteria in untreated water (MadiDrop without silver) to that of water treated with a MadiDrop (MadiDrop with silver) for each of the first five weeks of the study in Mashamba.

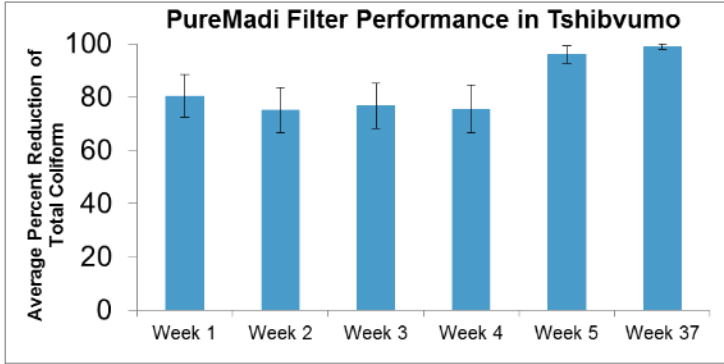


Figure 1: Data collected in the village of Tshibvumo which represents the average percent reduction in bacteria produced by the filters.

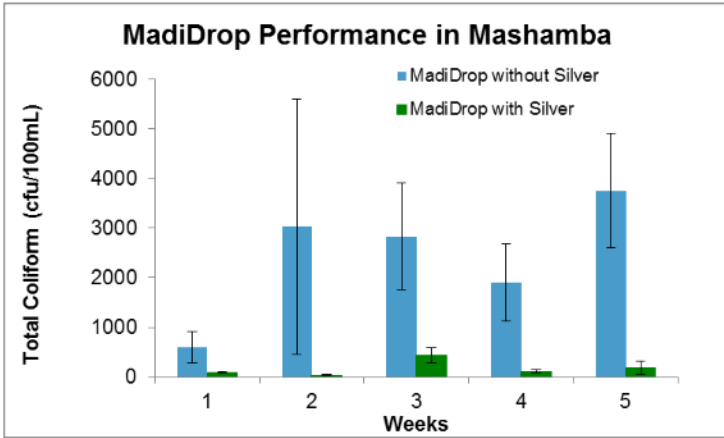


Figure 2: Data collected in Mashamba over first five weeks of the study compares the concentration of bacteria in untreated water to that of water treated with a MadiDrop containing silver.



Donate

To contribute to PureMadi, please visit www.PureMadi.org and click on our "Donate" link. All donations are fully tax deductible. PureMadi is operating as a 501(c)(3) not-for-profit organization under the umbrella of the UVA Fund managed by the University of Virginia Alumni Association. All donations go to PureMadi's activities in South Africa.

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