








## Sheet Shell Sand Filter

Desert Rose 

Desert Rose has patented a cheaper, lighter, and easier-to-produce filter than traditional cement biosand filters.

Launched in 2015, Hybrid (For-profit / Not-for-profit), Drinking Water, Purification, East Africa: Ethiopia

Partners: Oxfam Intermon, Tearfund/Water is Life International, Global Team Local Initiatives (GTLI).

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### Notice

Undefined variable: count  
ee/legacy/libraries/Functions.php(680)  
: eval()'d code, line 89 [show details](#)  
• Severity: E\_NOTICE

Ethiopia



### Problem Addressed

Efforts are being made worldwide to develop business models that enable traditional cement biosand filters (CBSFs) to be produced by local artisans in rural areas. However, CBSFs are not optimised for this. Transportation is made difficult due to the weight of the filters; the mold is expensive; and only one filter can be made per 24 hour period.

### Innovative Approach

Desert Rose's Sheet Shell Sand (SSS) filter was designed with the needs of the local market and local entrepreneurs in mind. Desert Rose extensively researched and worked with communities to determine why there was not greater uptake of cement biosand filters, and they designed a filter to overcome these design issues. The SSS filter can be produced more quickly and cheaply than other filters, and is much lighter weight than cement filters, enabling entrepreneurs to transport it more easily.

### Program Solution

Desert Rose has patented a biosand filter design in which the shell of the filter is fabricated from sheet steel joined with a waterproof seal and set in a stable base of concrete. The Sheet Shell Sand Filter can be made faster (3/day/person with hand tools) with cheaper tools (at a cost of approximately 200 USD), and it weighs no more than an average suitcase (23Kg) and removes significantly more pathogens than a cement biosand filter.

In addition, lower transportation costs and faster manufacturing rates are possible with the Sheet Shell Sand Filter. The cost-effective design enables far more people to access drinking water with the same funding than similar implementation of CBSFs. Desert Rose trains artisans working for NGOs on how to make the filter. The filter also incorporates a number of design "tricks" that enable higher pathogen removal performance.