



# Overcoming Water Shortage in Masai Land

39. Ilboru

Michael P. Laurent and Robin N. Damas

## Introduction:

The project was done to study and investigate the simplest and cheapest method for filtering and purifying dirty or used water so as to solve the problem of water scarcity in Masai land and other areas.

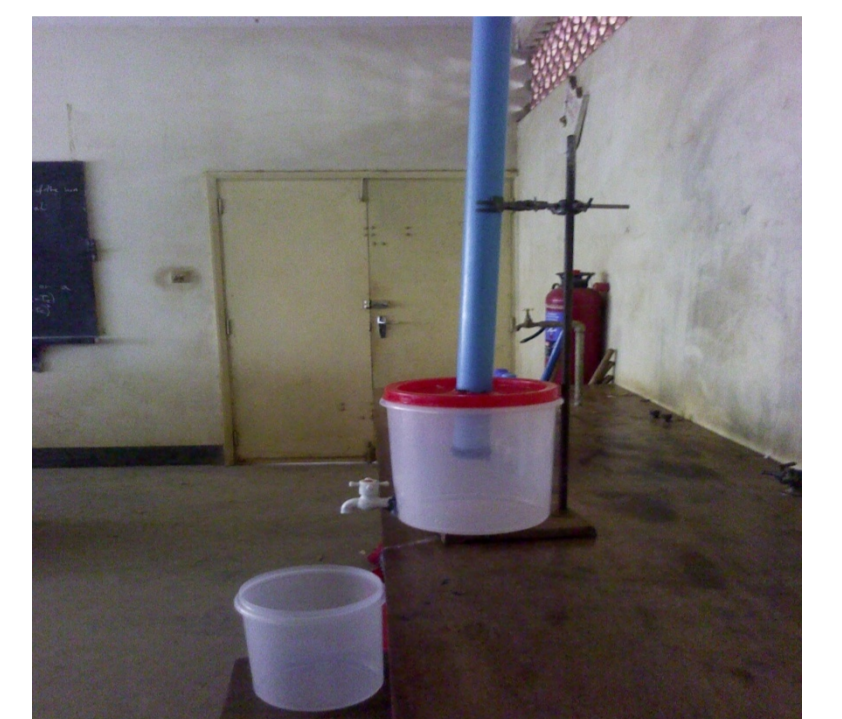
A simple water filter and water sterilizer was constructed using readily local available materials like plastic pipe, buckets, gravels, charcoal, cotton wool and sand, all of which are very available to our normal surroundings.

Several experiments were conducted to investigate the efficiency of filter depending on the different dimension in layers (thickness and height). Furthermore a sample of ten (10) respondents from our region was interviewed. We visited the village of Engrobob in ward of Emafia in Arusha district, Arusha region where we collected the data to find out all the potential problems that they face in association with the scarcity of water.

## Problem:

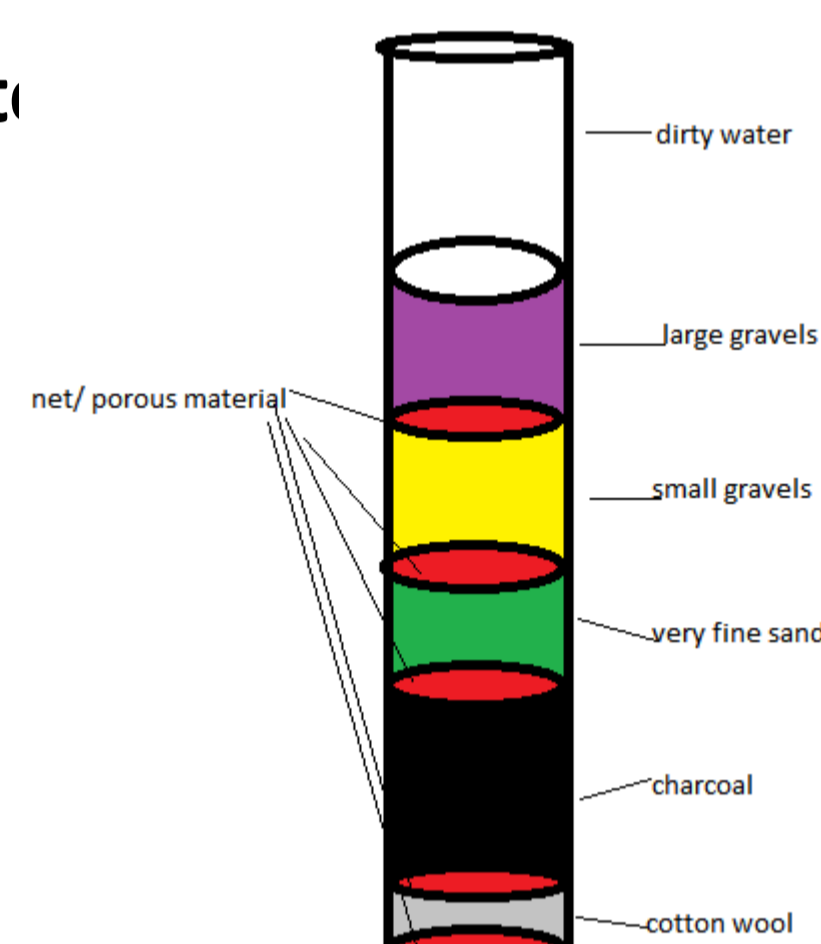
In April this year our country experienced a calamity of flood due to change in climate which was caused by environmental destructions then we asked ourselves why we still have shortage of water while we have a lot of water until the flood occur. Where does water go? Can't we change this negative thought to be positive?

Let's leave the areas having floods and concentrate to desert and semi-desert regions in which most of them are occupied by pastoral societies. Automatically these places also face the problem of water shortage, but still we asked ourselves again, don't they take bath? don't they wash clothes and other domestic utensils? They do so; now where these used water go?



## Construction of water filter:

Materials;  
Net (porous material)  
Charcoal,  
Sand,  
Large gravels,  
Small gravels,  
Cotton wool,  
Plastic pipe,  
Two buckets.



## Solar Disinfection:

Water which we obtain from filtration contains of different micro organisms. Due to that we have to treat filtered water using simple method which can be used by all people.

We suggest the simple method which is costless and friend to the environment is SOLAR STERILIZATION OF WATER. The filtered water are poured into the small bottles and then are placed to the sunlight for six hours and after that all micro organisms will be destroyed by the infra red radiations from the UV – light from the sun. Water which obtained from the sun is safe for drinking.



SAMPLE	Water before filtration	Water after filtration	Water after solar sterilization
BACTERIA	Present in excess	Present in small scale	None

Monday 29th, may of 2014 we visited one village called Engorbob, ward of Emafasia, district of Arusha and region of Arusha, northern Tanzania.

The song to sing was the same, scarcity of water. We made an oral interview to different families. Firstly we wanted to know their main source of water, how the scarcities of water affect them in family level and social level economically and politically, also what do they do with rain and used or dirty water.

We did our first interview with one mother named MAMA STELLA and our second interview was with MAMA CHIKU. Their main source of water is from wells and rain water. Mama Chiku gives us the history of water scarcity; years ago they were fetching water 5 kilometers distance of walking, waking up at 2a.m night. But MAMA CHIKU tells us on how the situation is currently, the situation is not terrible as past but the problem of scarcity of water, the distance of walking has been reduced and now they get water at distance of 1 kilometer only. The problem of walking a larger distance is one in the forest of many; let us see the series of challenges that the societies face especially children and women;



## Conclusions:

The concerning water filter was found to provide clean water and through solar sterilization we can get safe water. Due to that this project can bring changes to the societies also help our nation to reach MILLENIUM DEVELOPMENT GOALS 2015 (MDG'S SEVENTH GOAL) target number 10 which needs by 2015, the halve of the world to get clean and safe water in rural and urban areas for sustainable development.

Generally we recommend the use of these methods for filtrating and purifying the dirty or used water (recycling) to people in order to conserve our environment and so that people have cheap and sufficient ways of treating water for community development activities.

## References:

Chemistry book two, Tanzania Institute of Education  
Wikipedia the free encyclopedia  
Principle of physics by S. Chand.

## Acknowledgments:

We wish to extend our sincere gratitude to following who participated in the development and conduction of this project: Madam Veronica Kiduwa (supervising teacher), Madam Eudora and Mr. Lymo of Ilboru Secondary, Arusha Technical College, Nelson Mandela- African Institute Of Science and Technology (NM-AIST) and Arusha University. Furthermore, we would like to thank our fellow students from Ilboru secondary school who always enthusiastically challenged and offered us more insight on the project. Their criticism, comments and suggestions made our project work better.