



Scarcity of Water in Morogoro

18. Kilakala

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Introduction:

In recent years, water sources have been depleting. A question comes, how can water be made available throughout the year and how can that water be safe for human consumption. Among the solution of the problem is the recycling of used water from homesteads and industries but thinking of it, it cannot be used in small scale and it is not affordable by Tanzanian's hence this method is ineffective. But considering the fact that all regions in Tanzania have rainy seasons hence rain water can be the best solution of water scarcity. Thus the project comes to show that rain water can minimize water scarcity in our localities and can provide safe water that is water with less disease causing microorganisms such as salmonella typhi.



Method:

The project was done in Morogoro region that is found in the Eastern zone of Tanzania. This region was chosen because first it's within our locality and it's among the regions which receive high amount of rainfalls annually due to its geographical position and geographical features that include Mount Udzugwa and Mt. Uluguru and many rivers such as Ruaha and Kilombero Rivers. In spite of that fact the regions is characterized by severe water shortage and water supplied is not safe enough hence citizens are affected by diseases especially typhoid. The research was conducted specifically in the following sites Kilakala and Mzumbe Secondary. Plastic water bottles –used as Rain gauges.

- Measuring cylinders- used in measurement of collected rain water.
- Log book-for recording daily data.
- Tape measure –for taking building measurements.
- Charcoal, sand, gravels, cloth- for making an illustrating filtration tank.

The experiment started on 1st of May 2015 it was conducted by setting bottles which acted as rain gauges in open areas in our two mentioned sites and the collected rain water was measured using measuring cylinders and data obtained were recorded in millimeter cubic.

The blotless used were of diameter and hence covered the area of $\pi d^2/4$

Results:

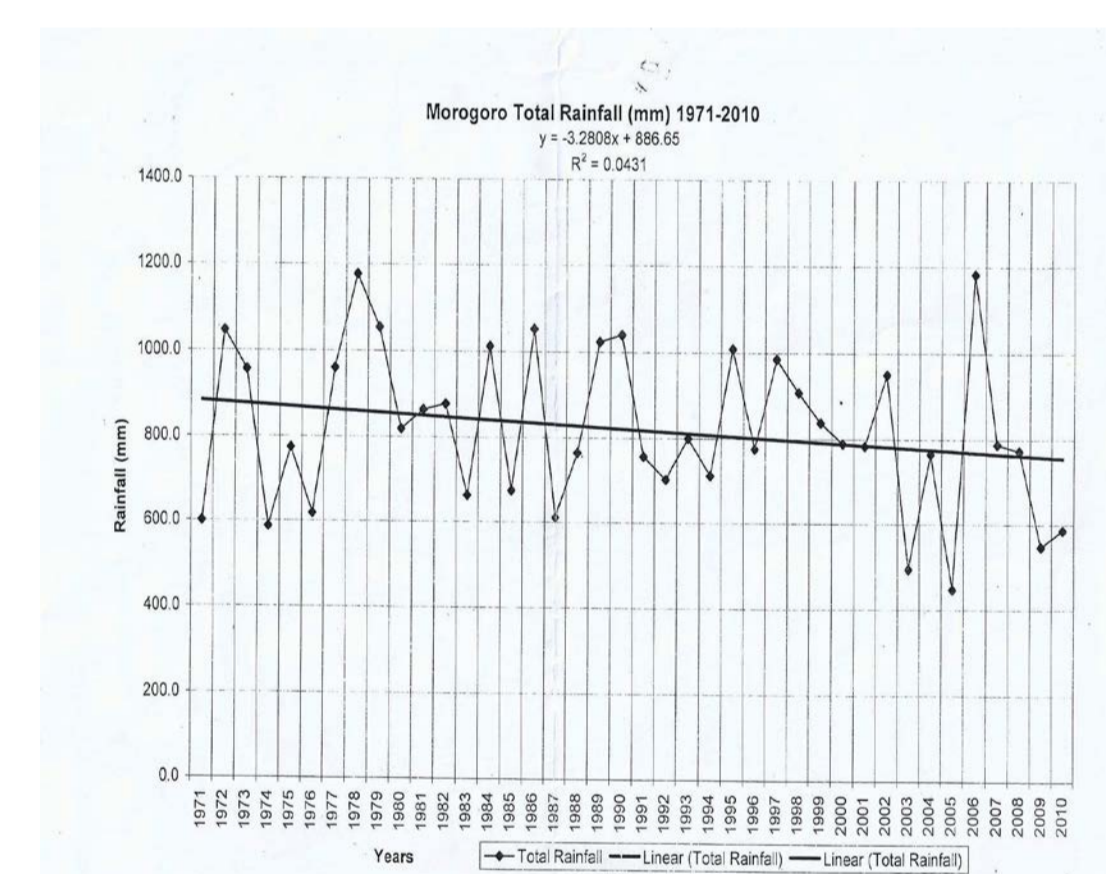
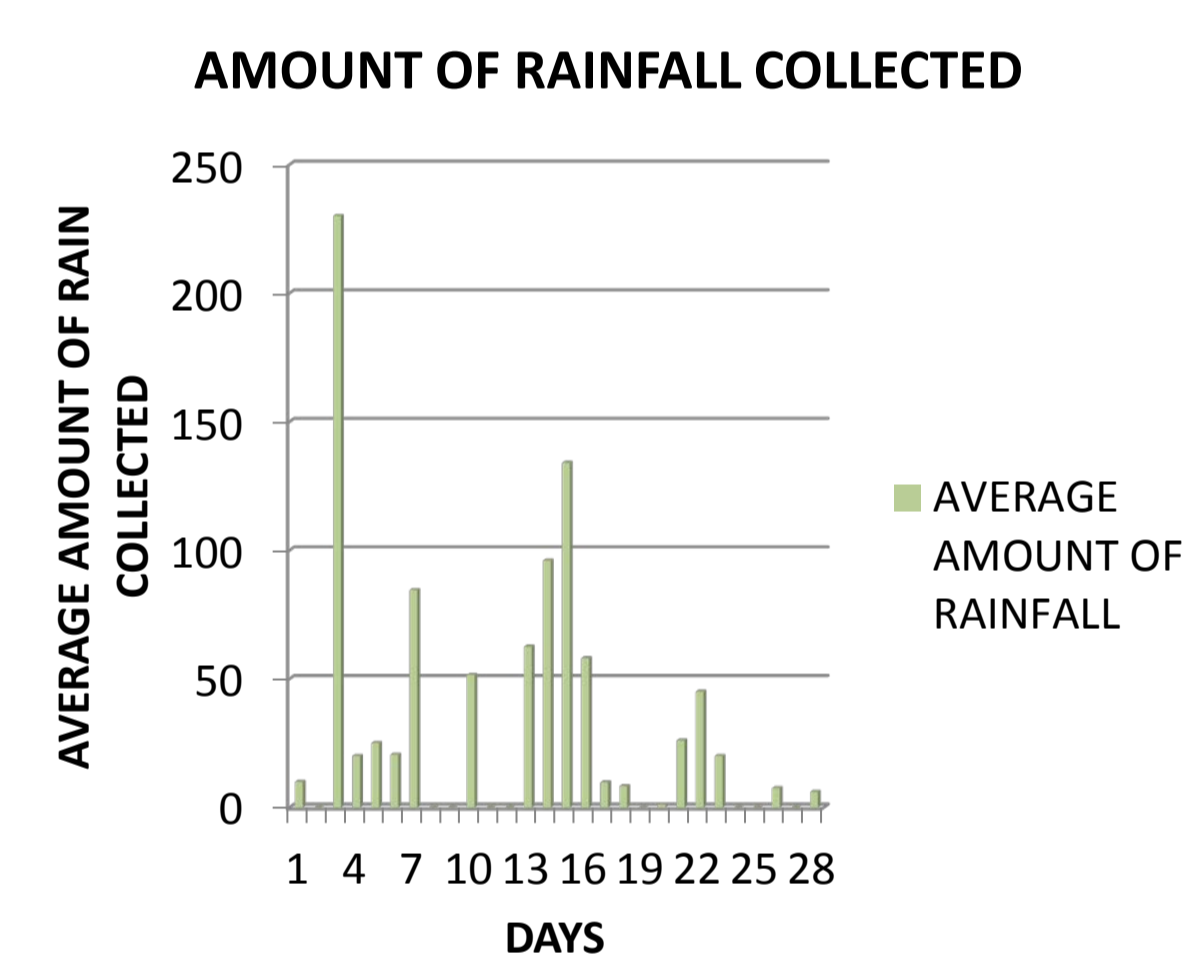
The table below shows the Amount of Rainfall collected from the two sites during 4 weeks' time.

We interviewed few people who lived in Morogoro by using questionnaires, the questionnaires used were closed questionnaire and from it the following main things were of our interest.

- How many rainy seasons did Morogoro experience?
- Were Morogoro citizens really fading the problem of water scarcity?
- Which source of water did the people rely on?
- Were they experiencing any water transmitted disease(s)?
- Was rainfall reliable during the rainy season?

The prepared questionnaires were supplied to 50 people of different age, sex and occupations and they were randomly picked and yet they were able to give us the basic ideas of what we needed to know.

From all the methods used the following results were obtained in each category. From experimentation we noticed that though it was the end of the rainy season Morogoro still received high amount of rainfall, because the rain was collected only within a small area, what if a large area was considered? It means more water could be collected especially at the beginning and mid of the rainy season.



DAYS	KILAKALA	MZUMBE
01	9.9 ml	10ml
02	0.0ml	0.0ml
03	210.0ml	250.0ml
04	18.0ml	22.0ml
05	23.0ml	27.0ml
06	18.0ml	23.0ml
07	84.00ml	85.0ml
08	0ml	0.0ml
09	0ml	0.0ml
10	49.0ml	54.0ml
11	0.0ml	0.0ml
12	0.0ml	0.0ml
13	75.0ml	60.0ml
14	92.0ml	100.0ml
15	133.0ml	135.0ml
16	57.0ml	59.0ml
17	9.5ml	10.0ml
18	7.5ml	9.0ml
19	0.0ml	0.0ml
20	0.0ml	2.0ml
21	27.0ml	25.0ml
22	43.0ml	47.0ml
23	19.0ml	21.0ml
24	0.0ml	0.0ml
25	0.0ml	0.0ml
26	10.0ml	5.0ml
27	0.0ml	0.0ml
28	5.0ml	7.0ml

Conclusions

From the questionnaires we observed that almost 50% of Morogoro citizens depend on supply of tap water, while 25% used well water, 20% river and dam water, while only 5% used rain water as shown.

Referring to the data collected the question of how water can be made available and that's simply by collecting and preserving rain water ever since rainwater are reliable during rainy season and the constructions needed are affordable. In addition to that, to make water to be collected safely before being stored, the water collected can be filtered first to remove dirty materials collected from the collecting system. The type of filtration suggested is fractional filtration ever since it is cheap and use materials that are available within our localities.

References

- During our research we referred to the following places;
- Internet tips from Wikipedia and Jami forms
- World Atlas
- Sokoine university weather station
- Longman Encyclopedia

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