

WASH YOUR HANDS in Africa!

CONCEPT MANUAL SMALL CALABASH CISTERNS or “Baby Calabash”

To protect your health during and after the CORONA pandemic.
Paul Akkerman, April 2020

Introduction. We present a new design: The Small Calabash for washing your hands!

The general task of our project CLEAN WATER HEALTHY VILLAGE is the construction of Calabash Cisterns to store drinking water. The knowhow of the technology is practised in 14 African countries. About two years ago we started to construct small cisterns with a tap for handwashing. The small cistern was meant to be used for hygienic reasons at the entrance of a market, restaurants, a shop or a pharmacy. The present pandemic makes it urgent.

Motivation: During the Corona pandemic people in Europe and in Africa realize that the regular **washing of hands** is an urgent need to protect your health and to protect your life.

We encourage all projects and project leaders in our African network and beyond to construct the small Calabash Cisterns for washing hands and to install them at strategic locations like: hospitals, health workers, shops, pharmacies and households. In this 8 pages you can find a CONCEPT CONSTRUCTION MANUAL for the “Baby Calabash”. It is a concept, so it can contain some mistakes or unclear information. Until now our masons have constructed about 50 Baby Calabashes.

In the countryside of Africa, usually is no running water. It is not easy to wash your hands without help of somebody pouring water over your hands. We hope that the Small Calabash is helpful for washing many hands with soap.



The first cistern for washing hands in Catio, 2018



Baby Calabash in Buba 100 L. and 50 L.

Our solution is a Calabash Cistern made out of cement: a Baby Calabash. This solution costs about € 45 for a cistern of 80 L. It can be made by local masons. Nobody will take it away, because it is heavy. The water stays cool and the lifespan is many years. We use the same technology as for the Calabash 5000 L. See the MANUAL on our website: www.cleanwaterhealthyvillage.com

Material for the construction of one Small Calabash. (source Sadjaliu Djalo, Guinea-Bissau)

1 bag of cement	CFA	6000
5 m of steel wire, to support the nose		500
Tap and a socket		6000
1 L blue paint		3000
0,25 L white paint		1000
labour mason		10.000
labour assistant		2500
sand and water		1000
clay blocks or cement blocks (reusable)		-

Total Cost CFA 30.000 = € 46, 00

HANDWASH IN TIMES OF CORONA

Here is the nurse Veronica in Oloonkolin, Kenya, teaching patients and children on how to wash hands for their safety in this pandemic. Photographs and text by Alfred Tobiko



The nurse Veronica in Oloonkolin, is teaching children on how to wash hands for their safety in this pandemic. Kenya

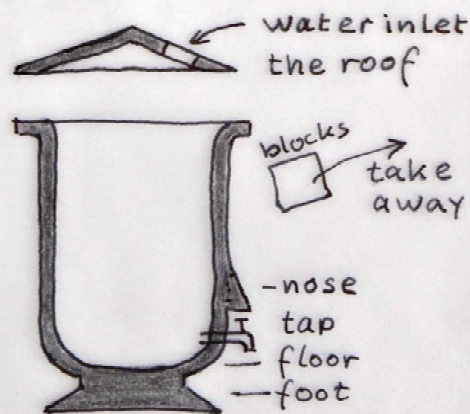
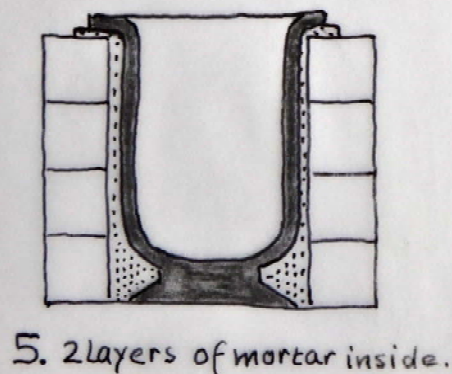
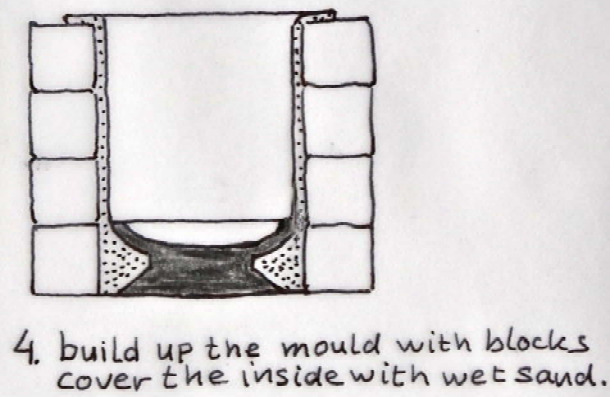
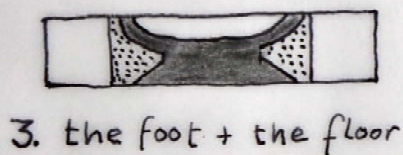
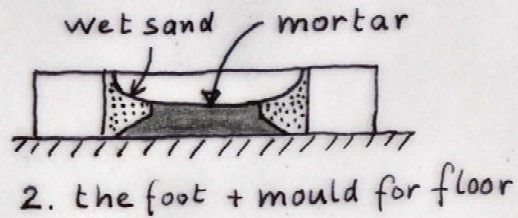
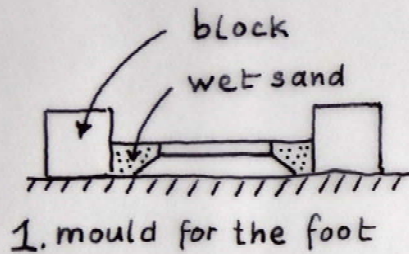


Hospital of Bedanda, Guinea-Bissau
Photograph by Sadjaliu Djalo, Guinea-Bissau.



Message from Alfred Tobiko in Oloonkolin, Kenya

CONSTRUCTION SEQUENCE BABY CALABASH



The wall of the hand wash cistern has 3 layers: 2 layers from the inside and one layer from the outside. The opening in the roof is to fill the cistern with water. It has to be wide enough to pass an arm to finish the gap between the roof and the wall and for cleaning. No steel wire for reinforcement. $A = \pi r^2$

The tap is situated on the edge of the floor and the wall. The nose is important for the identity of the Calabash.

Construction Sequence in Pictures



1. mould for the foot, see page 3

above: the formwork for the foot under the "first floor"



2+3 mould for the floor with mortar.



4. plastering 2 layers inside



5.



6. the roof is made on the ground, on a piece of paper of a cement bag.



7. installing the roof.



8. higher up on a bench to finish the work.

Construction Sequence for the finishing touch



Experienced mason is Braima Sori Bari at work

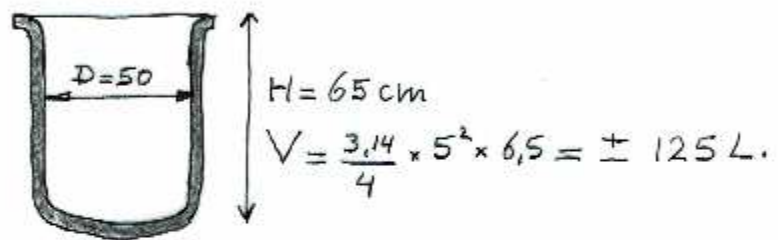
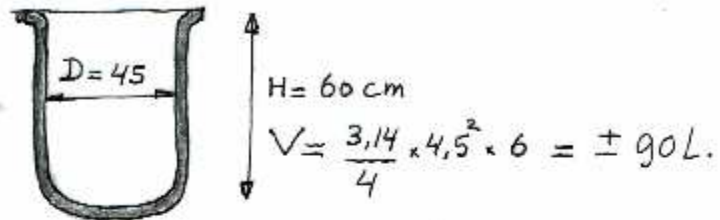


Amadu Djau and Cure Nabak do the finishing touch. Paul Akkerman and Sadjaliu enjoying the results.

The Volume of the Small Calabash

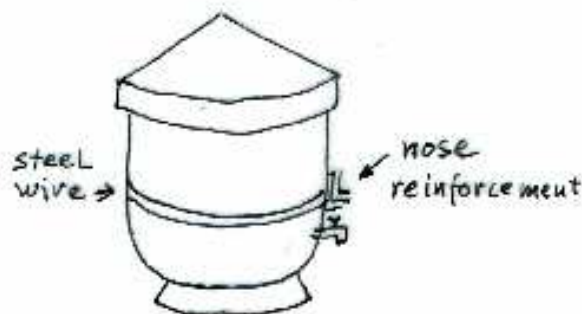
$$\text{VOLUME: } \frac{\pi D^2}{4} \times H$$

the formula to calculate the Volume V, $\pi = 3,14$, D = diameter interior, H = height interior



Which Volume can you reach with 1 bag (50 Kg) of cement?

We have some experience in Guinea-Bissau and in Kenya. The team of Sadjaliu constructed with 1 bag of cement a Baby Calabash of 90 L. Alfred in Kenya told me that his team succeeded to construct a Baby Calabash of 140 L. out of 1 bag of cement



Reinforcement:

No steel wire required apart from 2 circles to fix some chicken mesh for the nose.

Serial Production



Serial production of Baby Calabash in Bissora, Guinea-Bissau (photo by Domingos Tchuda)

Examples



Entrance of Pharmacy, Guinea-Bissau.



Hand wash at a school in Nigeria,
made by Kennedy and Obinna



Toilet in Training Centre Buba



Under construction,
Training Centre in Kenya



Filling the Baby Calabash



Private home in Guinea-Bissau,
the lady holds a bar of **soap** and a
bottle with disinfection.



Market Bissora



coordinator Domingos Tchuda and his wife.
Watch the soap !



policeman



Buba, entrance of Training Centre



Buba Main Market



transport of Baby Calabash



Binar



Guinea-Bissau



fishing camp Catabam Grande

