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# Cost Sheet for Rain- and Floodwater Harvesting

## Construction, Operation and Maintenance of Rainwater Harvesting Facilities: Ferrocement Tank

*Information based on the CuveWaters Project facilitated in the Cuvelai-Etoshia Basin in central-northern Namibia.*



Federal Ministry of Education and Research

Institute for Social-Ecological Research



TECHNISCHE UNIVERSITÄT DARMSTADT

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Sustainable Water Management  
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# Cost Sheet for Rain- and Floodwater Harvesting - Ferrocement Tank

## Preface

„CuveWaters – Integrated Water Resources Management in central-northern Namibia” is a joint research project of German and Namibian partners funded by the German Federal Ministry of Education and Research (BMBF). Main research partners are the Institute for Social-Ecological Research (Frankfurt, Germany) and the Technische Universität Darmstadt (Darmstadt, Germany). Partners in Namibia are for example the Ministry of Agriculture, Water and Forestry (MAWF) and the Desert Research Foundation of Namibia (DRFN), the project furthermore closely cooperates with One World Consultants (OWC) from Kenya. CuveWaters has developed different technologies for water supply and sanitation in central-northern Namibia, ranging from groundwater desalination to rain- and floodwater harvesting (RFWH) as well as sanitation and water-reuse. Between 2009 and 2013 different pilot plants were constructed at different places all over central-northern Namibia.

This cost sheet is part of a broad offer of information material on rain- and floodwater harvesting in Namibia. Beside this document, the “CuveWaters Rain- and Floodwater Harvesting Toolkit” promotes the extension of RFWH in northern Namibia and other water scarce regions. This document succeeds a series of rain- and floodwater harvesting manuals for Namibia which form the basis for RWH extension:

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For more information on organisational, institutional and other general aspects of rain- and floodwater harvesting please have a look in the "CuveWaters Rain- and Floodwater Harvesting Toolkit":  
<http://www.cuvewaters.net/Toolkits.112.0.html>

For more information on the CuveWaters project please visit <http://www.cuvewaters.net>

Alexander Jokisch

Technische Universität Darmstadt

Darmstadt, 26.10.2015

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# Cost Sheet for Rain- and Floodwater Harvesting - Ferrocement Tank

## About

Cost Sheet for Rain- and Floodwater Harvesting

Construction, Operation and Maintenance of Rainwater Harvesting Facilities: Ferrocement Tank

CuveWaters – Integrated Water Resources Management in Namibia

2015

This manual is also available on <http://www.cuvewaters.net/Toolkits.112.0.html>

For more information on Rainwater Harvesting in Namibia please contact

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# Material Cost Sheet Ferrocement Tank

Size: 30 m<sup>3</sup>

The following list shows material that is required for the construction and may be required during the operation of a RWH ferrocement tank for maintenance reasons and repair work as well.

	Material	Description	Price per Unit (in N\$)	Quantity Required
1	Cement		95	42
2	Weld Mesh	2.4m x 6m x 8mm	785	6
3	Binding Wire	2mm x 200m (5kg)	100	15 kg
4	Chicken Mesh	25mm x 1.2m x 50m	830	1 roll
5	Steel Deformed Bars	8mm x 6m	30	3
6	Bib Tap Garden	20mm	120	1
7	Galv. Elbow	20mm	6	1
8	Galv. Plug	20mm	3	1
9	Galv. Standpipe	20mm x 600mm	30	2
10	Galv. Standpipe	20mm x 750 mm	50	1
11	Galv. Socket	20mm	5	1
12	Galv. Tee	20mm	7	1
13	Manhole Cover	50cm x 50cm	150	1
14	PVC Pipe	4" (110mm) x 6m	191	1
15	PVC sheeting	0.15mm x 4m x 10m	200	1
16	Gravel / Concrete stone	½" to ¾", 0.5 m <sup>3</sup>	550	2.5 m <sup>3</sup>
17	Clean River Sand	10m <sup>3</sup>	750	10 m <sup>3</sup>
18	Sisal Rope	1 Ply 500 gr.	26	4 kg
19	Assorted Wire Nails	100mm x 4mm	20	1 kg
20	Empty Sacks	60 Pcs.	125	60
21	Water	<i>Large amounts of water are needed for mixing of concrete and curing of ferrocement.</i>		



# Tool Cost Sheet Ferrocement Tank

Size: 30 m<sup>3</sup>

The following list shows tool that are required for the construction and may be required during the operation of a RWH ferrocement tank for maintenance reasons and repair work as well.

	Tools	Description	Price per Unit (in N\$)	Quantity Required
1	Spade		105	1
2	Shovel Round Nose		100	1
3	Wheelbarrow		420	1
4	Bolt Cutter	600mm	210	1
5	Plastering Trowel	280mm	40	3
6	Plastering Float	Wooden, 280mm	30	2
7	Hand Saw	550mm	105	1
8	Hammer Claw	500gr	170	1
9	Sewing Needles		4	4
10	Spirit Level	Aluminium 600mm	80	1
11	Bucket, builders	12l	45	2
12	Gloves, builders	PVC	16	1
13	Gloves	leather	20	3
14	Rake	Garden, medium duty	75	1
15	Pliers, combination		50	2
16	Hacksaw Frame		44	1
17	Blades, Hacksaw	32TPI HSS	20	1
18	Roof Support Poles	(Gum Poles)	40	70
19	Plaster Sprayer			