



***Cuve Waters***

***Technische Universität Darmstadt***

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***and***

***One World Consultants Ltd., Kenya***

***www.cuvewaters.net***

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All publications of this series:

Water Storage:

#1 Ferrocement Tank

#2 Rectangular Underground Tank

#3 Pond

Horticulture and related Infrastructure:

#4 Greenhouse

#5 Drip Irrigation

#6 Sustainable Techniques and Practices for Water Harvesting and Conservation and their Effective Application in Resource Poor Agricultural Production  
(copy provided by the Water Research Commission South Africa)

Organisation and Extension Services:

#7 Proposal for a Rainwater Harvesting Builder's Yard

#8 Extension services in horticulture and irrigation with special reference to rainwater harvesting in Namibia

#9 Cost Sheets for Rain- and Floodwater Harvesting

# Cost Sheet for Rain- and Floodwater Harvesting – Daily Used Material

## 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 – Daily Used Material

## About

Cost Sheet for Rain- and Floodwater Harvesting  
Daily Used Material and Tools for Operation of RWH and Horticulture Sites  
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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## Materials for Daily Use

The following list shows materials that are required for the operation of a RWH and horticulture site. To ensure proper and sustained operation, the listed items need to be exchanged from time to time as maintenance or repair work. The quantities listed below are rough estimations only and depend on the incidents happening in the course of the year (e.g. storms occurring, animals trying to enter the fields, etc.).

	Material	Material Name in Oshiwambo	Description	Price per Unit (in N\$)	Quantity Required in the Course of a Year
1	Binding Wire	Odalate yokumanga	2mm x 200m (5kg)	100	2.5 kg
2	Chicken Mesh	Odalate yokolumbo leexuxwa	25mm x 1.2m x 50m	830	½ roll
3	Wooden Support / Fencing Poles	Oupaala voluumbo	100mm, 3m	90	1
4	Sisal Rope	Ongodi yokumanga yoSisal	1 Ply 500 gr.	26	1
5	Assorted Wire Nails	Eembosha	100mm x 4mm	20	0.5 kg
6	Submain Irrigation Pipe	Omunino wokutekela	Pipe LDPE 32mm (10m)	100	5 m
7	Drip Line	Oumunino vokutekela hava ndoda	4l/h x 30mm	800	50 m
8	Drip Saddle and Nuts	Omhuta yokukontolola omeva oku tekela, taa ndoda	Drip Saddle and Nuts	3	2
9	Screen Filter	Ekende ile ehalasha lokudindamo omadu ile omawe naikwao			1
10	Sealing Tape	Olaima yokupatifa nawa	PTFE Each Loose	3	1
11	Hose Clamps	Ouklemba voku twikinika eepaipi	32 x 57mm	6	2



12	Hose Clamps	Ouklemba voku twikinika eepaipi dokutekela	19 x 44mm	11	2
13	Seed Tray	Okaumbatifo keembuto		40	2
14	Transparent Plastic Sheet	Onhailonha hai limonikila yokeumbo litwima	for Roof of Greenhouse	5000	1
15	Shade Cloth	Onete yomudile yokeumbo litwima nokoilambo	for greenhouse or pond, 40% 3m (running meter)	45	15 m
16	Timber Purlin	Oikonde yoipilangi	50mm x 76mm x 6m (4pcs)	465	1
17	Shade Cloth	Onete yomudile yokeumbo litwima nokoilambo	for greenhouse or pond, 80% 3m (running meter)	75	5 m
18	Fencing Mesh	Odalate yo nete yokoluumbo	Diamond mesh 1200 x 75 x 25m x 1.8mm	400	1

## Tools for Daily Use

The following list shows tools that are required for the operation of a RWH and horticulture site. To ensure proper and sustained operation, the listed items need to be exchanged from time to time as maintenance or repair work. The quantities listed below are rough estimations only and depend on the incidents happening in the course of the year (e.g. storms occurring, animals trying to enter the fields, etc.).

	Tool	Tool Name in Oshiwambo	Description	Price per Unit (in N\$)	Quantity Required in the Course of a Year
1	Spade	Oshixupulo shaukilila		105	1
2	Shovel Round Nose	Oshixupulo shina omufima/shahonga koxulo		100	1
3	Wheelbarrow	Okatololi		420	1
4	Hand Saw	Oshisaaha	550 mm	105	1
5	Hammer Claw	Ohamala	500 gr	170	1
6	Rake	Oshihalaka	garden medium duty	75	1
7	Combination Pliers	Oshange		50	1
8	Knapsack Sprayer	Okandini koku pombela oupuka	Crossmark PB 16	730	1
9	Mask Dust & Gas	Omaska yokukelela ondwi		95	1
10	Filter Dust & Gas for Mask	Omaska yokukelela ondwi	2 pp.	85	1
11	Machete	Ekatana	Panga Crocodile	76	1
12	Puncher or Drill Bit	Oshilongifo shokutyuula eembululu/shokumboola	for drip irrigation lines	100	1
13	Watering Can	Evela lokutekela	Heavy Duty, 10 Litres	70	1