

MITIGATING

HUMAN-ELEPHANT CONFLICT

————— CONSTRUCTION MANUAL —————

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Sturdy Stone Wall



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Problem

Water storage
destruction

Country Efficiency

Namibia
Good.
Tested over 17 years.

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INFORMATION

Damage to water points



Windmill pushed over



Water tank pushed over

Breaking water points or houses

In their search for water, elephants often break water tanks (by either pushing them over or tusking holes into them), push over windmills, pull or break water pipes or even break into houses to access food or water stored inside.

Solution

The construction of sturdy stone walls can protect the water point and home stead from thirsty elephants.

Usually the elephant can still access drinking water in a near-by elephant dam without destroying equipment.



An elephant tusked a house



An elephant broke into a house to access food.

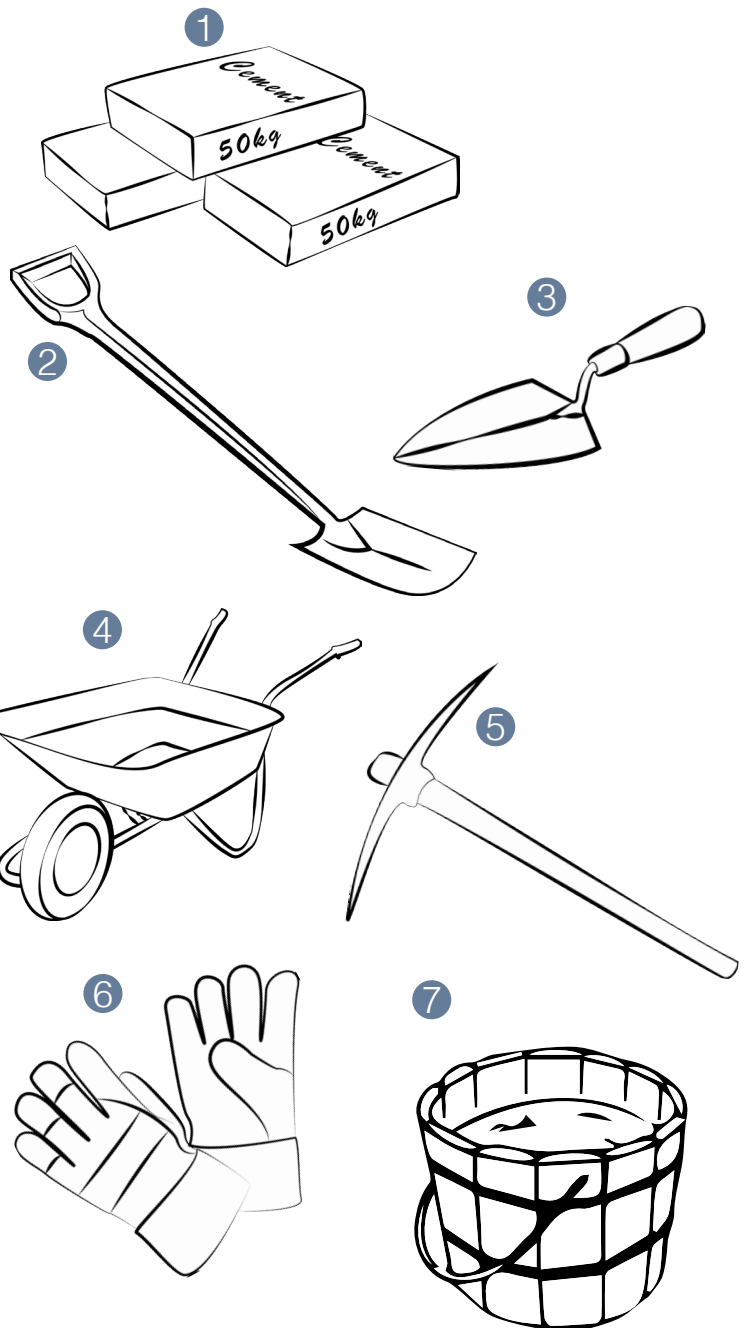
CONSTRUCTION

Constructing a sturdy stone wall is relatively cheap and proves to protect water installations from elephant damage. But it's hard physical work! With approx. 6 strong men you probably need 7-10 days to finish the wall. Follow the steps carefully!

Material Checklist

For 1 wall

- 1) 40 bags of cement (US\$10 each)
- 2) Spade
- 3) Trowel
- 4) Wheelbarrow
- 5) Pickaxe
- 6) Gloves
- 7) A lot of water
- 8) Loads of sand
- 9) Many rocks
- 10) Manpower

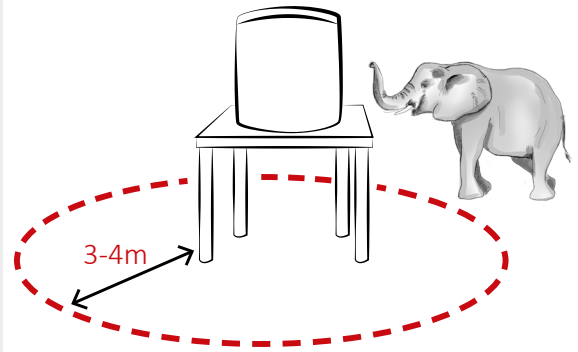


1

Mark the ground

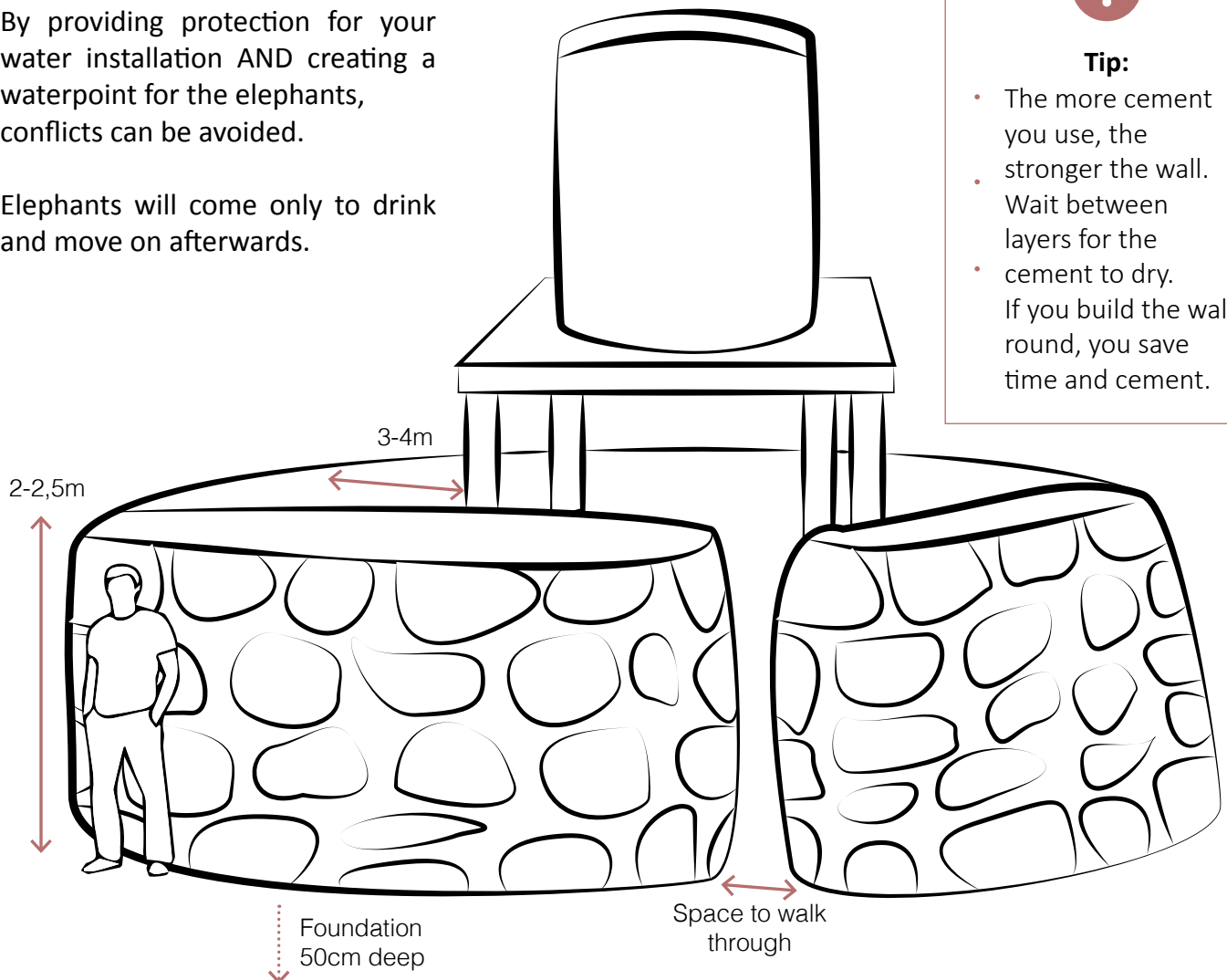


Mark the ground around the water point where the wall is to be built. Make sure that there is at least 3-4m between the water installation and the wall to ensure that the elephants can't reach over.



By providing protection for your water installation AND creating a waterpoint for the elephants, conflicts can be avoided.

Elephants will come only to drink and move on afterwards.



Tip:

- The more cement you use, the stronger the wall.
- Wait between layers for the cement to dry.
- If you build the wall round, you save time and cement.

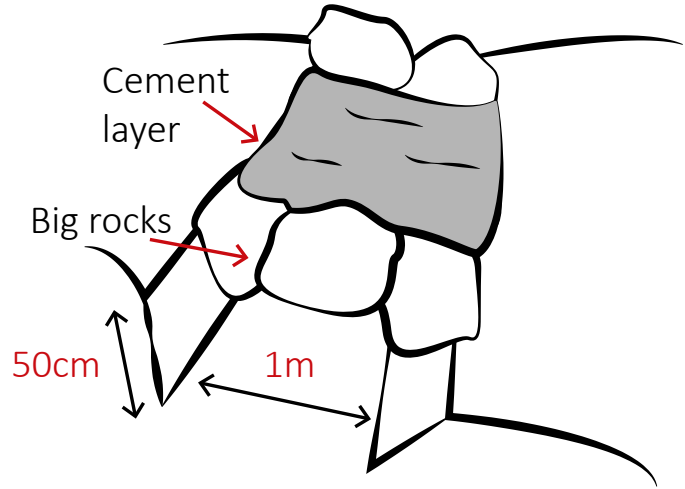
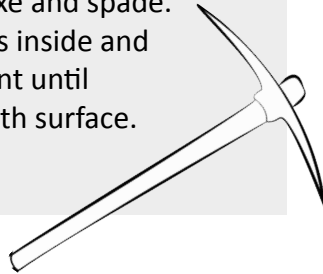
Illustration by Christin Winter
More info: www.ehranamibia.org

2

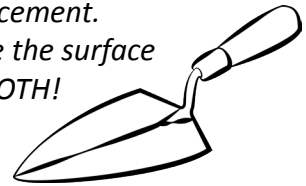
Dig the foundation

Dig the foundation:

Dig at least 50cm deep and 1m wide using pickaxe and spade. Lay very big rocks inside and cover with cement until you have a smooth surface. Let it dry!



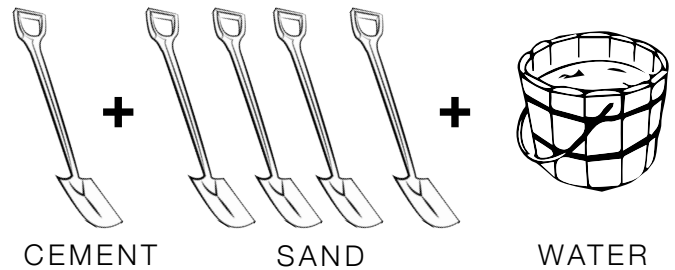
After layering the big rocks in the foundation, cover the rocks with cement. Make the surface SMOOTH!



Mix cement

3

Mix cement: Mix a ratio of 1 spade of cement and 4 spades of small grain sand with water to a thick paste. Make sure it's not too liquid as it wouldn't stick to the rocks.



Mix 1 spade cement + 4 spade of sand + water.

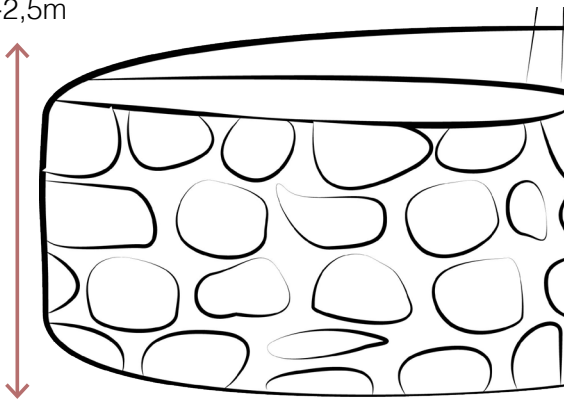
Mix to a thick paste! Not too liquid!

4

Lay the stones

Lay the biggest rocks at the bottom to ensure stability of the wall. You can use smaller rocks as you build up. Build **at least 2m high** and leave a small space for you to walk through.

2-2,5m



Use **GLOVES**
to protect your
hands!



You will need to have a strong car and a trailer to collect and carry big rocks for your wall. Easy access to soft sand is also beneficial.

Remember, that you also need small rocks to fill the gaps. **HAVE FUN!**



White Rock Barrier



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Problem

Water storage
destruction

Country

Namibia

Efficiency

Works well as an
additional protection.

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CONSTRUCTION

Constructing a white rock barrier is very easy and cheap. Depending on how many people help you, it might take a couple of days to finish the barrier.

As white is reflecting in the sun, it can hurt the elephant's eyes. Elephant feet are very sensitive. Walking on white pointy rocks is very uncomfortable for them and they will, if possible, avoid it.

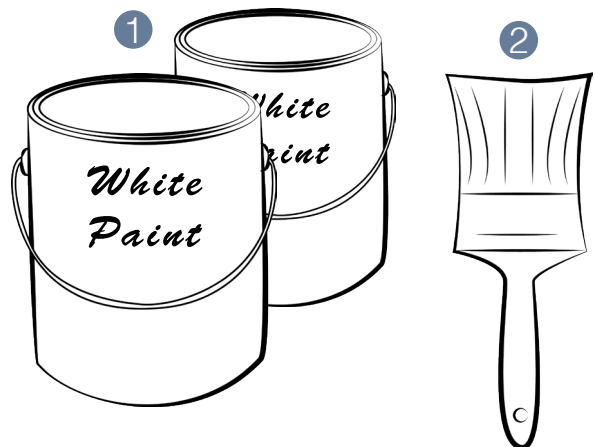
But:

If you put a white rock barrier around a vegetable garden, elephants might be motivated enough to walk over the white rock barrier, no matter how uncomfortable this may be for them!

Material Checklist

For 1 rock barrier

- 1) White paint (20l - N\$500)
- 2) Brushes
- 3) Petrol (for cleaning brushes)
- 4) Pointy rocks
- 5) Manpower



Before you start to lay out rocks, you might want to put a simple fence up, if you haven't got one standing yet.



Collect big, pointy rocks and lay them out in front of your fence/ house/ garden. Make sure, that the pointiest side is facing upwards.



For it to be as effective as possible, create a **3-4m wide barrier**. Now, paint all of the **rocks white!** Be generous with the paint!

Chili Fence

More info:



www.honeyguide.org
www.ecoexistproject.org
www.maraelephantproject.org

Problem

Crop raiding
Tanzania, Kenya,
Namibia, Zambia and
other African countries.

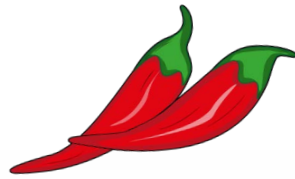
Country

Efficiency

Good if maintained.

This method has been developed by the Mara Elephant Project in Tanzania, Ecoexist in Botswana and other projects such as Honeyguide. In this manual EHRA describes how the chili fence has been adapted to protect gardens in Namibia.

Compiled by Elephant-Human Relations Aid, 2020
Photos and illustration by Christin Winter.



CONSTRUCTION

Chilli fences require **very good maintenance** to be effective. Chilli paste should be applied frequently - every day during the rainy season and every 3 days when crops in your garden reach maturity. EHRA trialed this method in Namibia where it effectively protected small gardens in a very arid region.

Material Checklist

Chilli paste for 20m fence

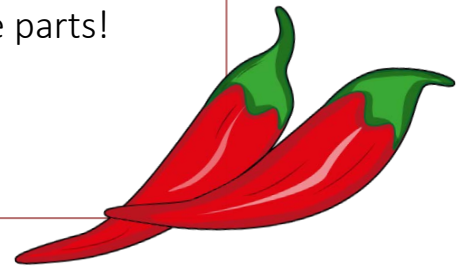
- 1 kg fresh chilli pods
- (50g tobacco powder, if you have)
- 500g waste grease
- 2l waste engine oil
- Squares of material (from an old rag/ shirt)
- 80m rope
- 3m long poles if you don't have a fence yet.
- An old cooking pot



Top tip:

Use **rubber gloves** while handling chilli!

Avoid any contact with your eyes and other sensitive parts!



1

Cut and mix the ingredients



- a. **Start a fire and place the old pot on it.**
- b. **Add the old engine oil and grease.** Make sure you wear rubber gloves. Let the oil slowly heat up.
- c. **Cut the chili into small pieces.** Use mostly red chili as they are hotter and will cause the desired effect.
- d. **Add chili to the pot with the oil!**



When is it ready?

Cook paste until the chili pieces come to the surface. If you smell the paste, you will feel a burning sensation in your nose and eyes.

That means the paste is ready now.

Let it cool down before handling it!

2

Prepare the rope

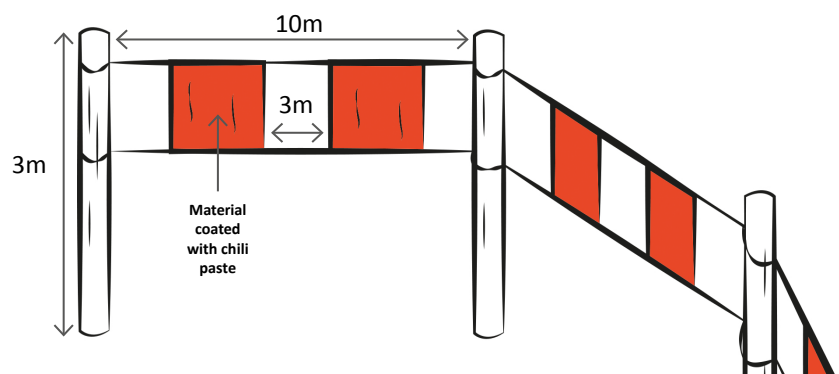


- Cut the rope in 11m pieces
- Soak rope in the chili mix until fully covered
Be careful, the chili paste might still be hot!
- Always be two people handling the rope.
- Fix the rope around the fence poles. Make it tight!



If you don't have a fence yet:

... then you need to build one. Hammer 3m long poles deep into the ground at 10m distance to each other.



3

Hang the material



What you see in the picture:

We use old rags and clothes. We soak the material in the chili paste and strap it tightly to the existing fence.

Objective in Namibia:

Covering the smell of greens by using a chili fence: The gardens are located outside of elephant pathways. This means elephants would only venture towards the garden if they smell the greens.

Where do the elephants come from?

Assess from which direction the elephants usually come from. Hang most of your chili coated materials on the main break-through side of the fence. Adjust if necessary.



Reapply chili paste frequently!



PLANT CHILI

To buy enough chili to maintain your fence can be very expensive. If you have a garden, start planting your own chili. Elephants **DON'T EAT** chili plants and so will not raid it. You can use your own chili for the fence, consumption and for selling!



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