

# **5** MISTAKES TO AVOID WHEN CHOOSING A SOLAR PUMP





Irrigating your farm with petrol pumps is expensive. Hauling a watering can around is exhausting. Neither option is a good solution for most farmers.

Yet irrigation is a brilliant way to improve your farm yields and in dry seasons especially, it can mean big profits.

*We'll let you into a secret...*

**Solar water pumps let you irrigate with the power of free sunshine.**

*...whats not to like about that?*





# SO WHAT IS THE SOLUTION?



Like many other farmers you have likely struggled with high fuel costs, frequent petrol pump breakdowns, or back-breaking work hauling cans and buckets of water from rivers and ponds.

Is it any surprise that because of these hardships only something like 3% of farmers in Kenya even attempt to irrigate?

The vast majority of farmers are simply hoping and praying for rains to water their crops. Sadly there is a good chance that the rains just won't come at the right time. Our once-reliable rainfall patterns are completely disrupted by climate change.

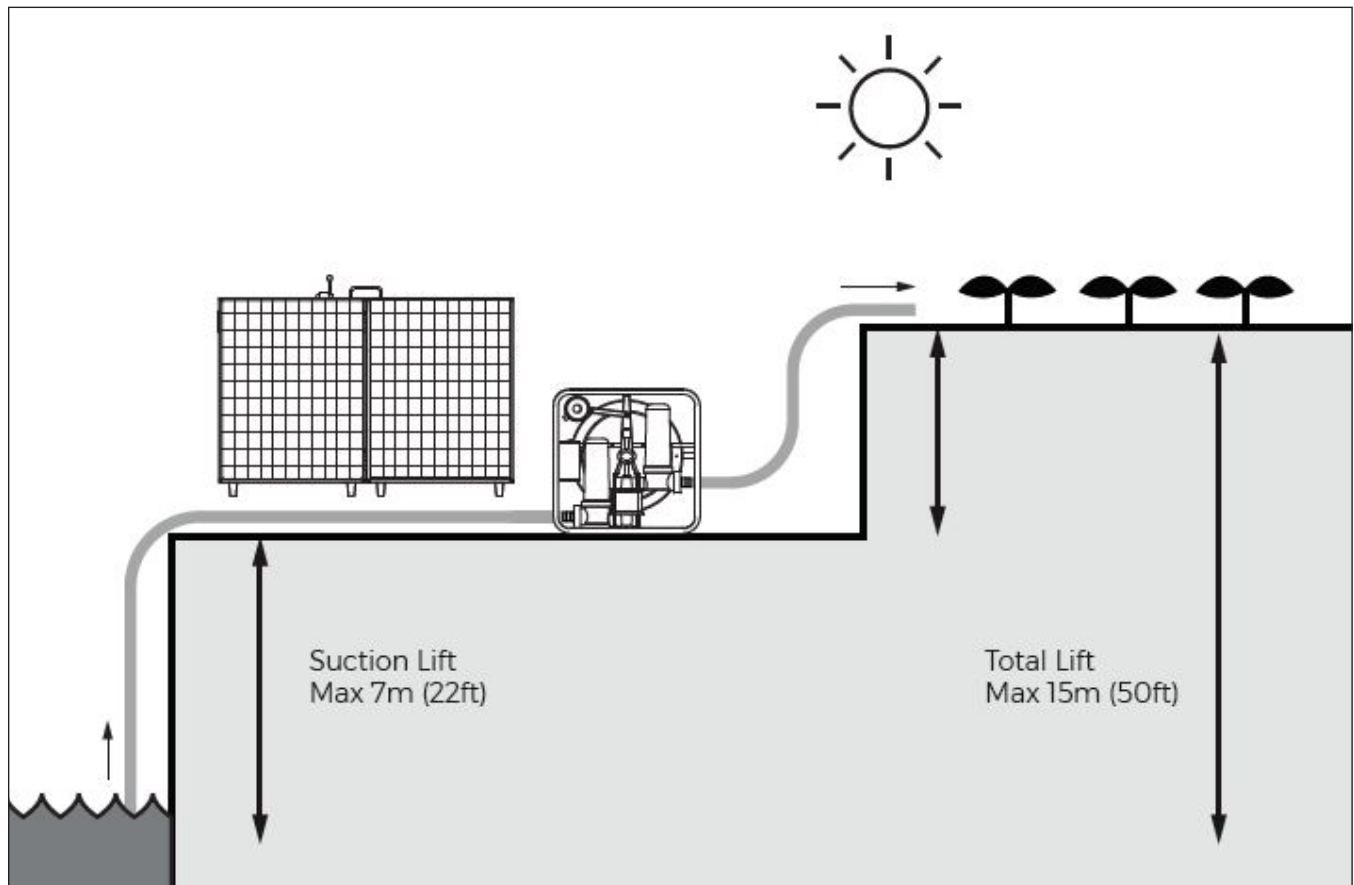
The solution is to **take control** of the water that your crops need, and **solar pumps** mean you can do that without locking into recurring fuel costs.

Futurepump has built and supplied over 7,000 solar pumps to farmers across the world since 2013. And our expert engineers have been designing pumps for small farms since 1983.

There are pitfalls along the way to **choosing the right pump** to transform your farming success. So read on for our guide to the five important things you need to consider.

# 1 WATER SOURCE

Don't make the mistake of buying a pump designed for boreholes, if you have a river.



The depth of your water source is really important and will usually affect what type of solar pump you should buy. There are two categories: surface pumps, and submersible pumps.

If your water can be reached in a shallow well, lake or river, you can use a **surface water pump** which will deliver more water to your crops for a given solar panel size.

Borehole water which is more than 10m below the surface will usually need a **submersible pump**, and probably a larger installation with a fixed solar panel to get enough water.

At Futurepump we are fanatical about helping people get the right pump. We specialise in

high-efficiency surface water pumps, we would happily recommend other providers if your water source is deeper underground.

## Tip!

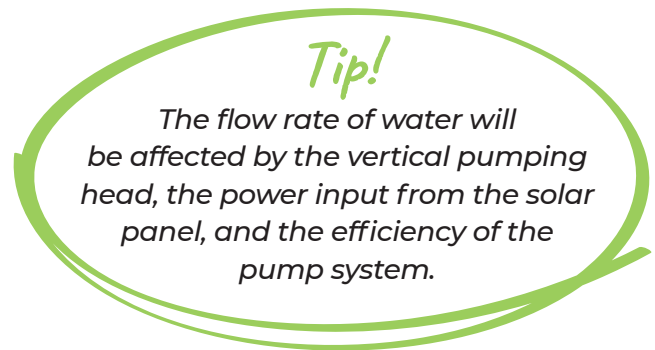
*The greater the vertical distance that the pump needs to lift water, the harder it will be working. That means you'll either get less water, or you'll need larger solar panels. Horizontal distance, on the other hand, makes very little difference to the work the pump has to do.*

## 2 FLOW RATE

Some farmers are disappointed when their solar pump doesn't pump water quickly enough.

Next, consider the flow rate of water which would suit your farm and crop. This is often measured by the litres discharged by the pump every second, minute or hour. Bear in mind that manufacturers usually refer to the maximum output, which means at the lowest pumping heads and in the strongest sunlight - don't get caught out by this.

It can be difficult to visualise what the flow rates of water quoted by manufacturers actually mean, so use our handy reference sheet below.



Here's a guide to some common solar pump outputs:

1 litre/sec	0.5 litres/sec	0.1 litres/sec
<b>3,600 litres</b> hour	<b>1,800 litres</b> hour	<b>360 litres</b> hour
<b>3.6 cubic metres</b> of water per hour	<b>1.8 cubic metres</b> of water per hour	<b>0.3 cubic metres</b> of water per hour
<b>20 seconds</b> to fill a 20 litre jerry can	<b>40 seconds</b> to fill a 20 litre jerry can	<b>3 minutes</b> to fill a 20 litre jerry can
<b>83 minutes</b> to fill a 5,000 litre tank	<b>3 hours</b> to fill a 5,000 litre tank	<b>14 hours*</b> to fill a 5,000 litre tank

Land you can irrigate with that flow (Rule of thumb assuming 5mm water evenly applied)		
<b>720m<sup>2</sup></b> per hour	<b>360m<sup>2</sup></b> per hour	<b>60m<sup>2</sup></b> per hour
<b>5,040m<sup>2</sup></b> = 0.5ha = 1.25 acres per 7hr day	<b>2,520m<sup>2</sup></b> = 0.25ha = 0.62 acres per 7hr day	<b>420m<sup>2</sup></b> = 0.04ha = 0.10 acres per 7hr day

\* 14 hours would realistically be at least two 7-hour solar pumping days, probably more



## 3 PORTABILITY

Is your solar pump system flexible enough to move around your farm or rent to your neighbours?



Some pumps are designed to be used with large solar panels which are too big to be carried around and so are fixed on a concreted steel frame, or mounted on a roof. That is fine if you can overcome theft concerns and don't need to irrigate in different parts of your farm.

However, other pumps, including the Futurepump, operate at a **high efficiency** meaning a smaller, portable or folding solar panel is **plug and play**, and can be safely packed away at night to guard against theft.





## 4 SERVICING

Thousands of pumps lie useless because servicing wasn't considered. Make sure your supplier will stand behind their product.



Whatever people say, even the most robust solar pump is at some point, going to need servicing. **These machines work hard.** Don't hope it won't happen, ask yourself what you'll do when it does.

So unless you plan to just throw away your pump and buy a new one, you'll need to think about where you can get spare parts or technical support. Is the pump designed to be user-serviceable? What manufacturer's **warranties** are available? Ask your local distributor if they will be there to help you **service** your pump and how long is the warranty

### *Futurepump's offering includes:*

1. 5 Year parts warranty on all pumps.
2. Common spare parts and the tools you need are supplied in the box.
3. YouTube servicing videos.
4. Free global support ticket service.
5. Additional technical support via your local dealer.



# 5 TOLERANCE OF SAND, MUD AND RUNNING DRY

Is your pump actually designed for farm work?



By their nature, farms are often muddy or sandy places, but surprisingly **not all pumps on the market are tolerant of sand** and may quickly wear out or fail if the water isn't completely clean. You may need to ensure the inlet pipe has a good filter or screen, to keep out sand particles and other debris which cause damage to many pumps. The Futurepump is highly tolerant of sand, by the way.

Oh, and ask your pump supplier if the pump will be OK with running dry. An unattended pump can easily end up pumping air from time to time. **Some pumps will overheat** and quickly fail if they run dry.



FIND OUT MORE ABOUT THE  
FUTUREPUMP RANGE OF SOLAR PUMPS  
[WWW.FUTUREPUMP.COM](http://WWW.FUTUREPUMP.COM)





## AND FINALLY...

On behalf of the Futurepump team I hope that these tips have been useful. Our company mission is to help farmers earn more money through using our robust solar irrigation pumps.

Visit [www.futurepump.com](http://www.futurepump.com) now to find out how a Futurepump Solar Pump can help grow your farming profits. Here's to your success!

**Toby Hammond**  
Managing Director  
Futurepump Ltd



 Future pump

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