

GUARANTEED UPLIFTMENT OF MARGINAL FARMERS

By the use of complete irrigation package- consisting of the one and the only foot operated Ecoflo Treadle Pump along with various options of lowcost water storage, micro irrigation drip kits and Mini sprinkler kits.



THE PRESENT RURAL SCENARIO ANYWHERE IN THE BACKWARD AREAS OF THE WORLD

Electricity to most is a lifeline today. But there are many such people in India and abroad who still live with less or no electricity. Considering one set of people- the agricultural farmers, there is no one line to sum up the importance of agriculture in any country. -Agriculture is the backbone or perhaps the only source of livelihood for the rural people. This is more so for backward, remote and interior areas which are quite far away from the rural areas situated nearby big town and cities. Such backward areas are even devoid of electricity or the power is for only for namesake. All the inhabitants are poor and marginal farmers who do farming with the primitive methods depending on the natural and seasonal rainfall. They can only grow seasonal crops during the rains for some part of the year. Rest of the year they are helpless and idle and this pushes them towards further poverty.

THE SOLUTION

Proper irrigation is the only solution for the upliftment of these marginal and poor farmers so that they can do farming for the maximum period in a year.

• Rainwater Harvesting:

Rain water can easily be collected and stored in simple dug up tanks and lined with specially developed plastic sheets -pond liners. This works out at very low cost and has good life depending upon the thickness of the liners. The liners are available in different sizes as per the tank capacities.

• Transportation of water:

Water from nearby natural sources like rivers, lakes, ponds etc can also be brought and stored for irrigation in the water storage reservoirs made as above. This was only possible by the use of electrical pump sets or diesel powered pumps. Both the above options were beyond the means of the marginal farmers and so a simple cost effective solution with no recurring cost was needed. The development of the Ecoflo Treadle pump fitted perfectly into the scenario. These pumps are portable so that a farmer can carry it anywhere put it place near any water source and pump water to a distance of up to 500mtrs through low cost pipes of trenches and then collect the water in the reservoirs for further using the water effectively by micro irrigation.

• Using the water for micro irrigation:

Micro irrigation kits in different types as per the requirements are then used for irrigating the small farms. The following are the micro irrigation kits which are widely used for the upliftment of the marginal farmers:

1. Bucket kit for growing vegetables in an area of 20 sq mtrs
2. Drum kit for growing vegetables in an area of 100- 200sq mtrs
3. Horticulture Drum kit for growing horticulture crops in an area of upto 1250 sq mtrs.
4. Mini sprinkler/microsprinkler kits for directly connecting to the Ecoflo Treadle pump to irrigate vegetable plots of 300sq mtrs area at a time on a shift table basis to cover an area of up to 2000sq mtrs



Winner of most prestigious Marico Innovation for India Award-2008 in the business for social sector.



Winner of Plastindia foundation Platicon-2005 award towards Excellence in contribution to agriculture.



ECOFLO TREADLE PUMP

The one and the only pump of its kind ever made.

Developed, Patented under patent registration no: 210928 dt. 3-12-07

Treadle pumps are in use from a very long time, but only in improvised versions.

The Basic Treadle Pump consists of two metal cylinders with pistons that are operated by a natural walking motion on two treadles.

The pump's low cost makes it accessible to even very poor farmers who can use it to grow dry-season vegetables for home consumption and for sale. Since 1985, when some NGOs first began promoting the treadle pump in Bangladesh, about two million treadle pumps have been installed worldwide. These are suited for manually irrigating small land holdings of one hectare or less.

Treadle pumps has significant advantages over motorized pumps for irrigation of agricultural land of less than one hectare. This is less expensive than motorized pumps. Costs much less to operate, having no fuel and practically no maintenance. Most importantly it can be used in inaccessible and remote places with no electricity, near any water source. With the user's body weight and leg muscles in a comfortable walking motion, the use of the pump can be sustained for extended periods of time without excessive fatigue. The treadle pump is much less tiring than other manual pumps that utilize the upper body and relatively weak arm muscles with much lower discharge.



The Ecoflo pump developed and Patented by Nasik (INDIA) based Bhinge Brothers, follows the same basic principle of the reciprocating suction pump but with the following distinct features:

- The pump manifold and fittings, cylinders and pistons are all made from injection molded engineering durable thermoplastic with close tolerances and with every component designed with ribs and reinforced sections to meet the most stringent conditions of wear and tear.
- The whole unit including the fabricated structure is portably designed in such a way that it weighs just 12kgs so a person weighing 60 kg should easily carry the unit, then should be able to suck up to 5000lph water from up to 7mtrs depth and pump it to a level up to 15mtr. a pressure enough to run a drip /sprinkler irrigation system or to transfer water to long distances up to 500mtrs.



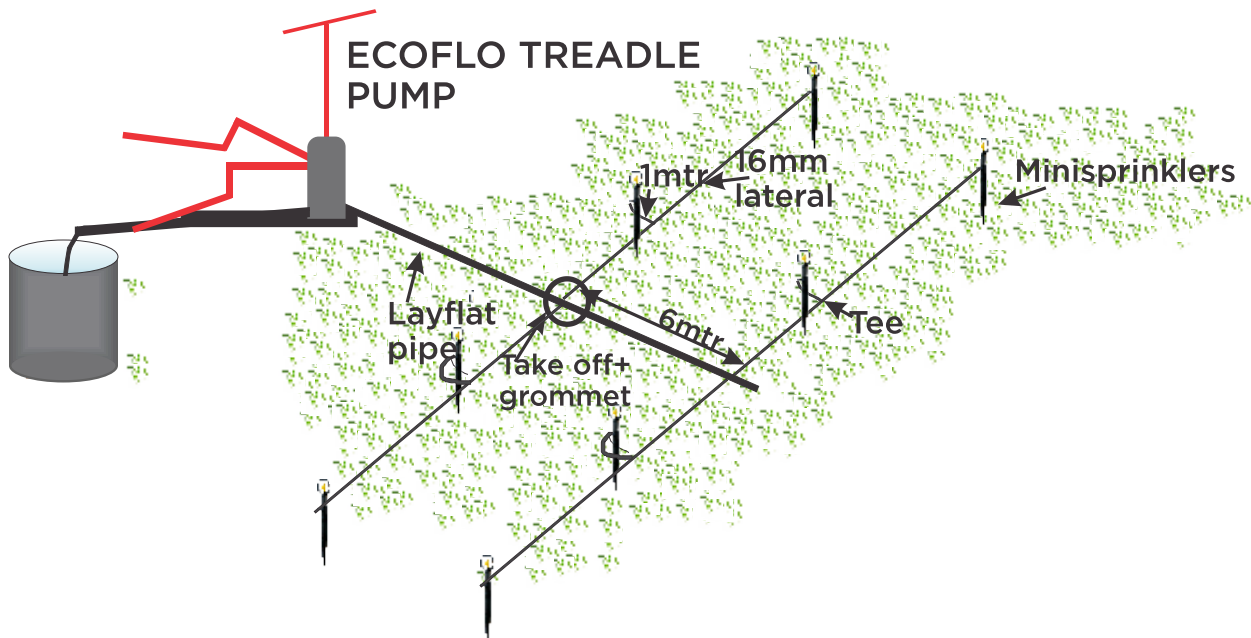
ECOFLO TREADLE PUMP

- The pump has a metal frame structure to support the thermoplastic “Cylinder-Piston manifold block assembly” in the firm position. The hollow steel powder coated frame structure is designed in such a manner that the plastic molded assembly doesn’t require to be bolted or fixed. It is secured perfectly in place protected from mechanical strains. The piston design and the mounting of the rubber gaskets is aimed to get minimum frictional losses.
- The one and only pressure treadle pump of its kind. The only alternate solution to electric pump.
- No operating cost. Simple & effortless pedaling/stepping motion.
- Very efficient design to give best results with minimum muscle power.
- Available in 1.5” & 2” nipples for connecting the inlet & outlet pipes.
- Water from nearby natural sources like rivers, lakes, ponds etc can be brought and stored for irrigation by means of The Ecoflo Treadle pump into simple manmade reservoirs with simple and low cost pond liners.
- Optional Standard Accessories include suction pipe (50mm dia) -7mtrs with specially developed foot valve and 25mtrs PE delivery pipe roll.



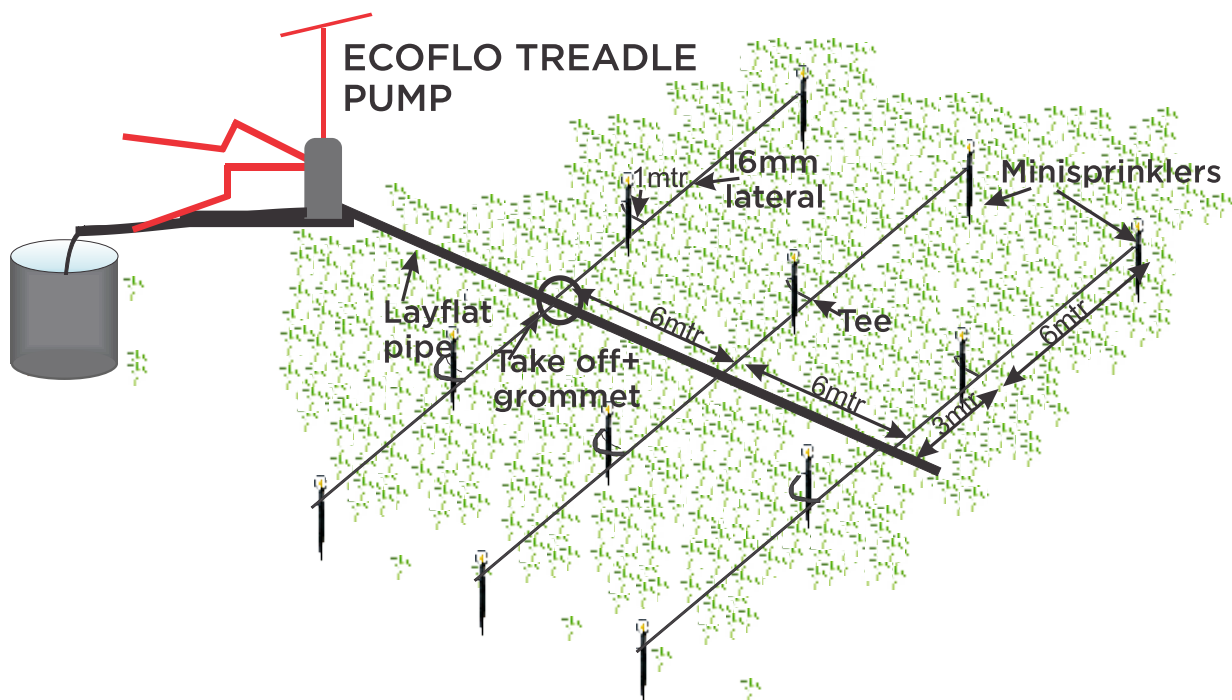
300SQ.MTR MINI SPRINKLER KIT

300sq.mtr Mini sprinkler kit can be easily operated with the Ecoflo treadle pump. 8 mini sprinklers can be operated at the same time with this pump.



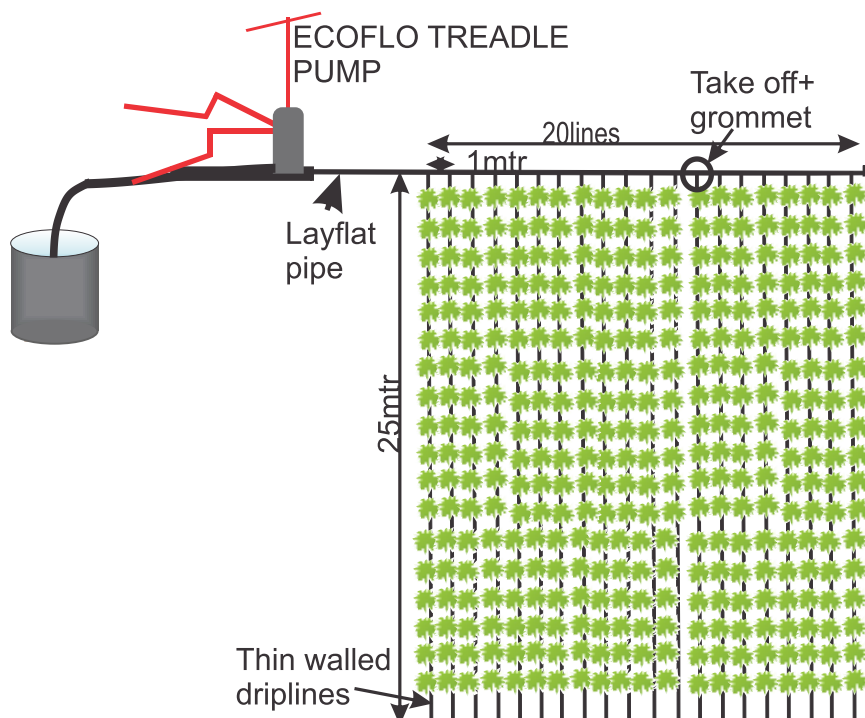
500 SQ.MTR MINI SPRINKLER KIT

500sq.mtr Mini sprinkler kit can be easily operated with the Ecoflo treadle pump. 12 mini sprinklers can be operated at the same time with this pump.



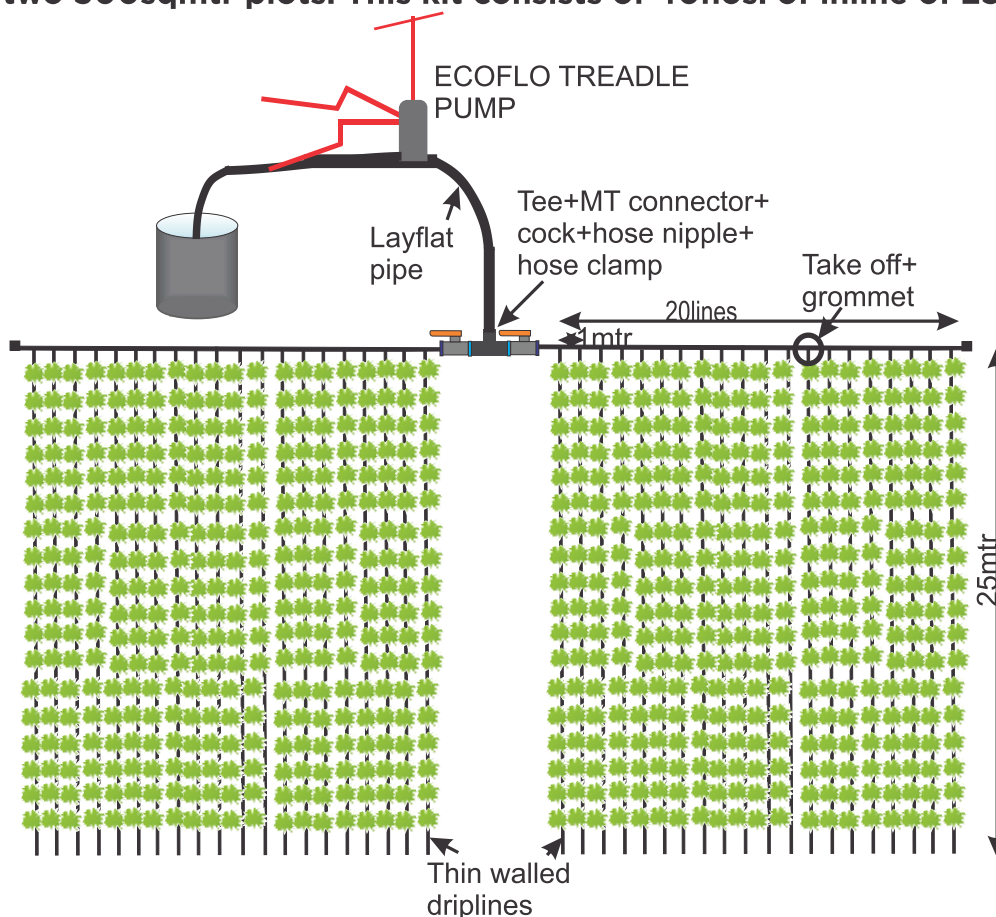
500SQ.MTR INLINE KIT

500 sq.mtr inline kit can be easily operated with the Ecoflo treadle pump. This kit consists of 20nos. of inline of 25mtr each.



1000SQ.MTR INLINE KIT

1000 sq.mtr inline kit can be easily operated with the Ecoflo treadle pump by dividing the plot into two 500sqmtr plots. This kit consists of 40nos. of inline of 25mtr each.



Comparison	Existing / Traditional Industry way- Mild steel Galvanized fabricated treadle pumps	Our Ecoflo Treadle pump with plastic durable cylinders piston assly and manifold box assly.
Material of construction	<ul style="list-style-type: none"> • The cylinder barrels of all the pumps are made from steel sheets with a seam welding. The performance is depended on workmanship and the skill of the fabricator. • The Manifold and also the piston are fabricated MS sheets • All these are subjected to rusting and corrosion 	<ul style="list-style-type: none"> • Consistent product quality is achieved as almost all the working components in the piston cylinder and manifold assembly are injection molded in engineering thermoplastic material. • Closer tolerances achieved. • Since the main pump unit is made from thermoplastic, corrosion or rusting or even scaling is ruled out. And at the same time nothing happens to this even after years of operation no UV aging.
Design of Piston and manifold	<ul style="list-style-type: none"> • The pistons are also fabricated from steel. The replacement of gaskets is a difficult task. • The manifold is practically non existent in the ms pumps as it is very difficult for fabrication 	<ul style="list-style-type: none"> • Easier maintenance - the piston gaskets are simply mounted on the injection molded integrated piston with piston rod without the use of any fasteners. • The manifold is perfectly designed and has everything to make the pump very effective. It is produced as a single injection molded piece
Ease of Operation	<ul style="list-style-type: none"> • The barrel piston assembly with the steel piston rings and gaskets offers a very high frictional resistance to movement hence more stressful and shorter life of the rubber seals. The overall operating efficiency of the existing units is low. Greasing is necessary which makes the water non drinkable./potable. 	<ul style="list-style-type: none"> • Smoother finish and concentricity of cylinder bore and piston - hence minimum frictional losses and hence easier and highly efficient operation resulting to minimum and optimum use of manpower. The thermoplastic material used for the cylinders is of inherent lubrication property. With just any edible oil the operation gets further smothered allowing no contamination due to grease or any lubricant.
Weight	<ul style="list-style-type: none"> • The weight is about 28kgs making it difficult for the farmer for transportation. 	<ul style="list-style-type: none"> • Minimum weight - Just about 12kgs -50% less weight than the available ones. Making the unit more portable. To the extent even a child can carry it anywhere and work on it.

Comparison	Existing / Traditional Industry way- Mild steel Galvanized fabricated treadle pumps	Our Ecoflo Treadle pump with plastic durable cylinders piston assly and manifold box assly.
Self Priming	<ul style="list-style-type: none"> • Very difficult to directly lift water from a well. Initial priming is necessary 	<ul style="list-style-type: none"> • No priming i.e filling of the suction pipe with water is necessary. Can lift easily from as much as 25ft deep. Rather used as priming pump for diesel engines.
Running directly the micro/mini sprinkler systems	<ul style="list-style-type: none"> • This was difficult as there was no sufficient pressure and also the operation itself was very cumbersome. 	<ul style="list-style-type: none"> • The operation so smooth with enough of discharge and pressure that even a small boy can run a mini sprinkler system with ease to irrigation area of upto 500sq mtrs
Replacement of spares	<ul style="list-style-type: none"> • Very difficult as everything is welded. 	<ul style="list-style-type: none"> • Cylinders, piston asslys and any part in the manifold is replaceable if necessary. Normally all the parts are designed for rough use.