

## Enabling prosperity through promotion and use of treadle pump

### Innovator

International Development Enterprises India (IDEI) is a not-for-profit registered U/s 25 of Companies Act. Over the last two decades, [IDEI](#) has championed and promoted the [treadle pump](#). The treadle pump is an affordable irrigation technology that enables a smallholder farmer to not just buy it but also use it and overcome the primary/entry level barrier of accessing water for irrigation and therefore year round cultivation. IDEI has successfully promoted it with over 870, 000 smallholder households (over 4.5 million people) who have already adopted the treadle pump. IDEI works on the market based approach and establishes private (non-exclusive) supply chain comprising of manufacturers, dealers and installers who manufacture, sell and install the treadle pump. The supply chain members are trained, licensed and supported and quality checked by IDEI. Simultaneously IDEI generates awareness about the treadle pump amongst the farmers by using innovative static and dynamic promotional activities such as leaflets, wall paintings, banners, demonstration plots, farmers exposure visits, farmer meetings, etc. These allow the farmers to see and make clarifications on the use and effectiveness of the technology and therefore decide to buy the pump. By using the pump, user farmer generates USD 400 as net additional income annually and year on year. This disposable income is put to multiple uses including better nutrition, ploughing back into agriculture, debt repayments, children education, asset creation, accessing health services and others.

IDEI's work and impact has been recognised by Ashden Awards for Sustainable Energy, Zayed Future Energy Prize, The Tech Museum, Schwab Outstanding Social Entrepreneurs, Skoll Foundation's Social Entrepreneurship Award, The Templeton Freedom Prize Award, Global Development Network, The World Technology Network and Ashoka Changemakers Award.

### Details

Considering that over 70% of India's population is rural and 70% of rural are smallholder farmers typically owning and cultivating less than a hectare of land, it was rational to target and empower them to take the lead. However, unable to afford expensive conventional irrigation technologies and almost absence of small plot technologies, smallholders are restricted to limited rain-fed farming, resulting in poor food/income security. The Green Revolution bypassed smallholders, reaching only large landholders with capital to access large-scale irrigation and mechanized farming. This boosted development & promotion of irrigation technologies but only for large farmers. Large looming numbers compelled IDEI team to focus itself entirely on smallholders.

Food security has always been a major concern for India. Hunger and malnutrition was and continues to plague millions of people. More than 50 per cent of the children in rural areas suffer from malnourishment; with 21 per cent suffering from severe malnutrition. This could be linked with low incomes and therefore low affordability.

The treadle pump was developed by IDEI and after years of research and development and several on-field testing was commercially launched by IDEI. It has been adopted by over 870,000 farmer households (4.5 million people). The ability to engage in cultivation for three additional seasons throughout the year helps the farmers generate additional income.

- Treadle pump is a foot operated suction pump for lifting ground/ surface water aptly designed for smallholder irrigation requirements.
- It is best suited to irrigate about one acre of land (smallholder farmers in India own less than this).
- Average water discharge is about 4000 litres/ hour to a maximum depth of 8 meters. Farmers on an average pump 6-7 hours a day to irrigate their field.
- Marketing of the pump is under the “[KB](#)” [Krishak Bandhu](#) (Farmers’ friend) brand name.
- It is an easy to use and gender friendly technology that is operated by both men and women farmers easily.
- It is an environment friendly manually operated technology.
- Most farmers pay upfront cost for the purchase of treadle pump.
- Foot operation over hands makes it least fatiguing when compared with other traditional devices.
- It enables farmers to irrigate their lands throughout the year thereby helping them overcome monsoon dependent cultivation.
- Treadle pumps are promoted using the unique market based approach.
- With less than \$50 investment, farmers own an irrigation technology that lasts 8-10 years and empowers them to become successful entrepreneurs.
- Intensive promotional activities have led to 871,759 smallholder households adopting the pump.



(Left) Farmer using [Surface Treadle Pump](#)

(Right) Lady Farmer using [Bamboo Treadle Pump](#)

## Advantages

- With the use of treadle pump the user is able to earn USD 400 additional net income. The farmers use this money to educate their children, renovate their dilapidated houses, access health facilities and build other assets.
- Disposable incomes enable farmers to include vegetables, milk and other food items on a daily basis ensures intake of a healthy balanced diet.
- Treadle pumps replace the use of conventional diesel pumps thereby saving diesel and contributing to carbon emission reduction.
- TUV Nord has verified greenhouse gas savings from avoided diesel as 0.477 tonnes/ year CO<sub>2</sub> per pump.

Title	Social return on investment (SROI)
<b>Diesel savings (litres)</b>	Over 600 million
<b>Carbon Emission Reduction (tCO<sub>2</sub>eq.)</b>	2 million
<b>Employment generated in the supply chain (person days)</b> This includes employment generated on farm, in manufacturing, retailing and installing.	381 million

IDEI has design rights for the product. Treadle pumps are marketed under the brand name of KB (*Krishak Bandhu*).

## Additional information

[Website](#)

Success stories [→](#) [→](#)

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