

Opportunities and Constraints to Adopting Agricultural Water Pumping Technologies

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The Context

Access to irrigation can help improve livelihood opportunities and raise incomes of smallholder farmers. But to effectively reach them it is necessary to know:

- What technology they choose from the available range of treadle, diesel and electric pumps, and why?
- What factors determine investment in technology?
- What are the opportunities and constraints for adoption of irrigation technologies?

What Technologies are They Choosing and Why?

Most smallholder farmers preferred electric motor pumps followed by diesel engines - use has been high in the past few years.

This is, in part, due to the increase in availability and the variety of pumps on the market. New pumps are smaller and lighter, so they can be used for small plots and can be moved between fields.

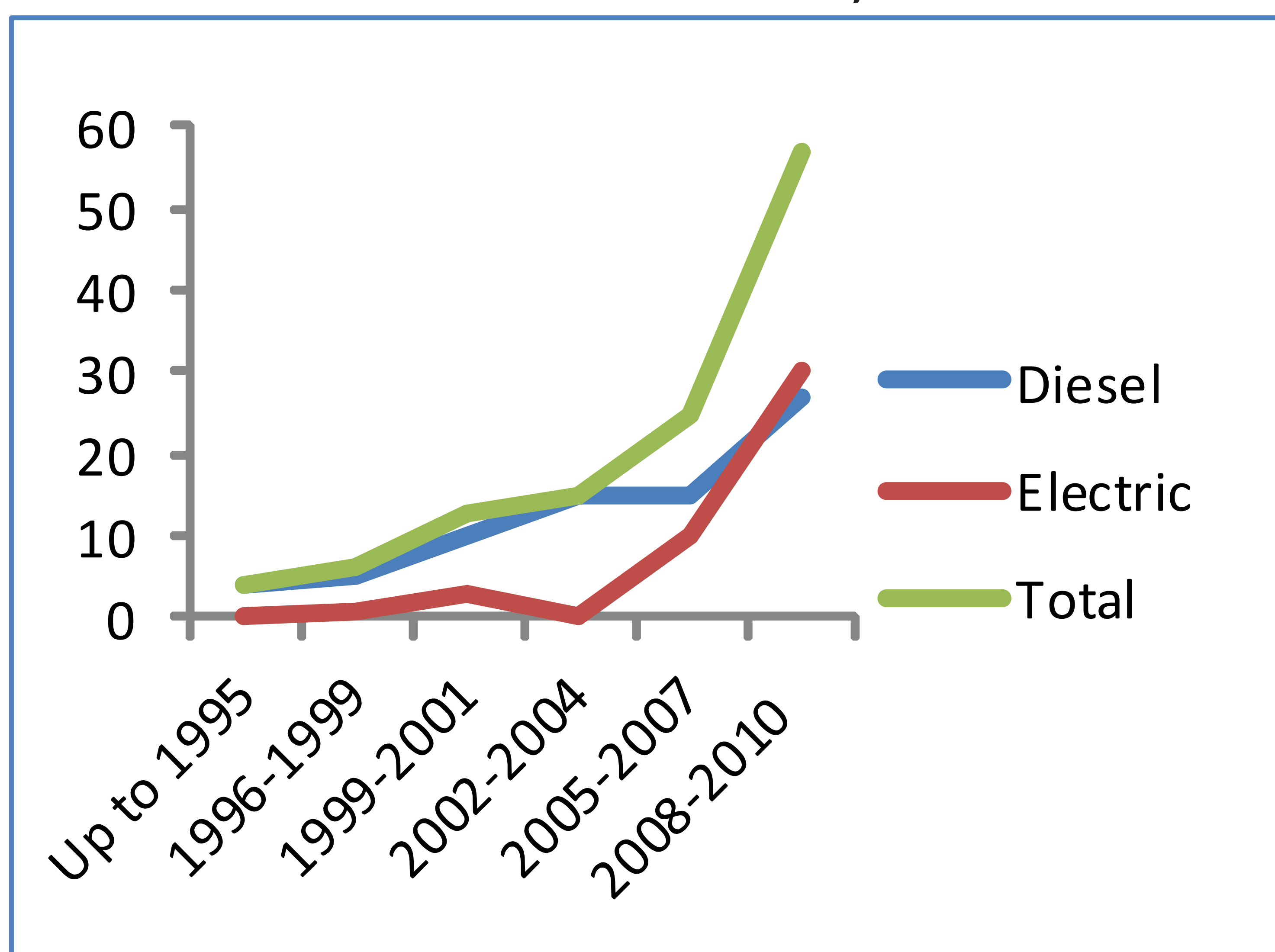
Currently nobody is choosing treadle pumps. Reasons for this are:

- insufficient manual labor;
- inadequate water supply; and
- those who cannot afford motorized pumps opt to rent rather than invest in treadle pumps.



Farmer using a treadle pump

Patterns of investment in motor pumps by sampled farmers in Cooch Bihar, India



What Influences Adoption?

- Investment in irrigation technology does not necessarily follow a step-by-step path up the technology ladder – farmers do not always adopt manual pumps before motorized pumps.
- Technology adoption is a dynamic process – what is appropriate now may not be appropriate at another time.
- Low-cost technologies are not always favored – other factors are also important and smallholder farmers carefully weigh these up.

Constraints to Pump Ownership

- Lack of financial resources to buy pumps.
- Insufficient sources of unbiased information - farmers rely on equipment dealers for information.

Where to Invest

- Provide financial subsidies for farmers to invest in irrigation technology.
- Provide technical advice to help farmers choose the appropriate technology.

