Evidence-informed policy change to improve access to groundwater in West Bengal, India

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Highlights

Evidence impact

The West Bengal government made two changes to improve access to groundwater for irrigation. These changes were informed by with the recommendations made in the 3ie-supported impact evaluation.

Factors that contributed to impact

- Timely evidence coincided with political changes in West Bengal.
- Relevance of evaluation evidence increased as the interests of several key decision makers converged.
- The evaluation contained clear, feasible and useful recommendations.
- The researchers had credibility and prior relationships with key actors

Evidence use brief

Evidence-informed policy change: improved access to groundwater in West Bengal, India

This brief highlights the factors underlying two evidence-informed changes to West Bengal's groundwater access policies.

Impact evaluation details

Title: Does marginal cost pricing of electricity affect groundwater pumping behaviour …

Authors: JV Meenakshi, Abhijit Banerji, Aditi Mukherji and Anubhab Gupta

Status : Completed March 2012

Context

Groundwater resources in West Bengal are abundant and support irrigated rice production. However, farmers believe access to groundwater has been unduly restricted through electricity pricing and licensing of irrigation tube wells that limit agricultural production.

In the 1980s, the West Bengal government introduced a flat electricity tariff for farmers using tube well irrigation systems. At that time, tube wells were rare and the cost of meter reading was higher than the revenue it generated. This scenario led to a rise of informal groundwater markets, in which poor and marginal farmers purchased water from better-off farmers to irrigate their crops.

Additionally, politicians often set low tariffs to garner electoral support, leading to high revenue losses for the state electricity board. Flat tariffs also resulted in groundwater over-exploitation in regions with low rainfall and poor aquifers. In a bid to reduce the state electricity board losses, the state government reintroduced tube well metering in 2007, and required a permit to sink a tube well. Although this shift benefitted the electricity board, the move was thought to disadvantage millions of poor farmers with small landholdings, who relied on the informal groundwater markets for irrigation.

There was a growing need to generate evidence on the impact of the tariff policy on the state's 100,000 pump owners and the additional 10–20 farmers to whom each pump owner sold water,

amounting to 1–2 million affected households. When the researchers engaged with decision makers on the findings, the new state government promised to ease groundwater access for poor farmers.

Evidence

In 2010, 3ie supported an impact evaluation by researchers at the International Water Management Institute to explore the impact of changes in electricity pricing in West Bengal, from a flat tariff to metered pumping of groundwater for irrigation.

The study found that farmers with metered tube wells made less use of groundwater during the boro rice growing season (cultivation from November to May under irrigated conditions). This decrease was not confined to pump owners' irrigation of their farms. It also had an adverse effect on water sales and purchases. However, metering did not have an impact on cropping patterns or the output of boro paddy fields.

Evidence impacts

Informed two decisions to ease groundwater access by poor farmers

In November 2011 and again in November 2012, the state government made policy changes that were consistent with recommendations in the 3ie-funded impact evaluation.

The first change was the amendment of the 2005 West Bengal Groundwater Resources Act by Subrata Biswas, secretary of the Water Resources Investigation and Development Department. The department amended one provision of the law; farmers in areas with potential for groundwater development and with lower-powered pumps would no longer need to apply for costly permits.

Biswas made a second policy change in electricity policy and procedures after becoming secretary of the West Bengal Department of Agriculture. In 2012, the department launched a scheme to give new electricity connections to farmers, in return for a fixed connection fee. This meant farmers would no longer have to meet the full cost of wires, poles and transformers.

According to Aditi Mukherji, principal investigator of the 3ie-supported study, reducing the cost of irrigation through a one-off capital cost subsidy meant 'it was easier for small and marginal farmers to apply for electricity connections, [because it] removes all the road blocks that [the] research had identified'.

Suggested citation

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influence@3ieimpact.org

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