

Groundwater irrigation actually reduces poverty: Aditi Mukherji

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Aditi Mukherji, a social scientist with the [International Water Management Institute](#), New Delhi, has just won the first Norman Borlaug Award for field research and application, given by the World Food Prize Foundation, for her work on usage of groundwater in agriculture. Her research has led to policy changes in West Bengal, benefiting thousands of farmers. She tells **Saira Kurup** that if these new policies are properly implemented, Mamata's state may well see a second Green Revolution. Excerpts:



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What got you interested in groundwater irrigation?

I started working on groundwater and irrigation issues in 2001 when I joined the IWMI-Tata Program in Anand, Gujarat. As a part of that work Tushaar Shah of IWMI and I designed a survey of groundwater users in [South Asia](#) and the survey results surprised me. I realized that groundwater economies in eastern India were very different from the dominant discourse of scarcity and over-exploitation that we hear about from the rest of India. When I got the Gates Cambridge Scholarship to study at Cambridge in 2003, I decided to work on socio-economic, policy and institutional issues in access to groundwater in West Bengal.

What were the problems in groundwater usage there?

The most important problem was high energy costs for pumping groundwater because of farmers' dependence on diesel pumps and the fact that diesel prices have been increasing rapidly. In WB, only 17% of all pumps are electrified, against a national average of over 60%. In states like Punjab, Haryana, Karnataka, [Andhra Pradesh](#), over 80% pumps are electrified.

Electrification of pumps would have been an easy solution. However, I found that farmers faced two main difficulties in getting an electricity connection. First was the Groundwater Act of 2005 which required all farmers to get a permit from the groundwater authority before they could apply for an electricity connection. This process was fraught with red tape and corruption. I saw how farmers would come and wait at groundwater offices for hours, waiting to meet officials and would then be turned back on some pretext. Second, even if a

farmer managed to get a permit, he would have to pay the full capital cost of electrification. This included cost of wires, poles and transformers and often would come to Rs. 1.5 lakh and more.

How did all this affect the economy?

After showing high growth in mid 1980s and early 1990s, West Bengal's agricultural [economy](#) slowed down and in recent years barely registered 1% annual growth. Groundwater economy contracted too. For example, the number of groundwater wells declined from by over 1 lakh from 2001 to 2007 - entirely unprecedented in India. This is a paradox given that the same minor irrigation census shows that in 80% of the villages, groundwater is available within 10-metre depth.

What were your recommendations?

[West Bengal](#) has one of the best agricultural electricity governance regimes in India. The majority of electricity pumps are metered and farmers pay high electricity bills, which in my opinion is a good thing. It sends the right price signal.

The real constraint was getting an electricity connection. We suggested removal of permits system in all blocks where the groundwater situation is safe. We also suggested rationalization of capital costs of initial electrification, but also recommended that metered tariffs must continue. The government has accepted most of these suggestions. In addition, it is deploying NREGA funds for excavation of ponds. That will help in groundwater recharge.

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Did you face any political opposition?

The new government was absolutely supportive. The group that was not as supportive was a few middle-level technical staff in the groundwater department. For them, removal of permits also meant end of scope for rent seeking and corruption.

What would be the impact of your work? Can this model be replicated in other regions?

I think, if implemented properly, it may as well [usher](#) in a second round of Green Revolution in the state. Yes, it is totally replicable in eastern states like [Bihar](#) and [Assam](#) which have alluvial aquifers. By providing timely, adequate and reliable irrigation, groundwater helps in reducing poverty.

How can access to groundwater be made more equitable?

Distribution of groundwater assets (wells, tubewells) is already much more equitable than ownership of land. But equity impacts can be enhanced by targeting small and marginal farmers while giving electricity connections. Also, encouraging informal groundwater markets will work in favor of the very small and marginal farmers, who may not want to invest in a well or tubewell.

In a country where the monsoon is fickle, and groundwater scarce in many states, what are the lessons we need to learn?

The lesson to learn is to contextualize our solutions based on local conditions. My work challenged the dominant discourse that use of groundwater always had negative consequences and hence should be discouraged everywhere. Having said that, rainwater harvesting and conjunctive use of groundwater and surface water resources is equally important.

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