Widespread and rapid adoption of groundwater irrigation was one of the primary enablers of India’s Green Revolution in the 1960s. Spurred by aggressive electricity subsidies, groundwater irrigation improved the livelihoods of millions of farmers across all strata of society in every corner of the country. However, this has come at a huge environmental and financial cost: groundwater resources in certain regions are depleting at an alarming pace, and perverse subsidies have forced most state power utilities to operate in the red, adding significant strain on the national economy.

Currently, in India, there are two popular tariff structures used by power utilities to charge groundwater well owners: flat tariffs, wherein farmers pay a fixed monthly bill depending on their motor’s power-rating, and pro-rata tariffs charged per unit of power consumed. We reviewed and compared the two tariff structures in terms of their environmental, economic, social, and political causes and consequences across multiple jurisdictions in India. Our assessment shows that although flat tariffs lead to a more equitable distribution of water between rich and marginal farmers, their zero marginal cost provides tubewell owners little incentive to conserve water. On the other hand, pro-rata tariffs, while encouraging efficient water use, are disproportionately biased against small farmers engaged in buying water from groundwater well owners. This has created a dilemma for policymakers: how to provide sufficient irrigation services to the 90 million households dependent on groundwater for farming, while avoiding wasteful consumption of the country’s finite energy and groundwater resources?

We then discuss some approaches that can assist policymakers in restructuring agricultural power tariffs with the aim of benefitting the most vulnerable sections of society while also conserving energy and water resources. While no single approach is a perfect solution for all woes, a comprehensive understanding of the strengths and weaknesses of all viable options can help policymakers improve agricultural power tariffs and subsidies to simultaneously meet multiple Sustainable Development Goals related to poverty reduction, water and energy access, inclusive economic growth, inequality reduction, and sustainable consumption.