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**Title: The Evolving Role of Rural Electrification in Indian Agriculture**



Electricity access is considered to be essential to development and has therefore been included in the Sustainable Development Goals. However, the specific channels through which electricity access impacts development at the household level is less understood – studies range from positive impacts on household expenditure to no impact on income or employment. In rural India, one of the major roles of electricity has been in enabling groundwater irrigation, which has led to increased agricultural production, productivity and thereby farm incomes, albeit at the cost of depleting groundwater resource. However, electricity access also plays an important role in the regional imbalance of groundwater access, as seen in its indiscriminate use for pumping groundwater for irrigation in the northwest and southern parts of India, in contrast to the relatively less developed groundwater irrigation in the central and eastern regions despite healthy levels of groundwater. I hypothesize that a temporal change in India's rural electrification policy has resulted in the stunted role of electricity in groundwater irrigation in central and east India. The shift together with early regional targeting of Green Revolution technology have resulted in states where electricity was introduced with differing motivations – groundwater pumping in 1970s and 1980s and household electrification starting late 1990s. I use fixed effects regression employing a village level panel dataset to test my hypotheses and measure the impact of average household electrification rates on various agricultural outcomes including productivity, adoption of hybrid seeds and cropping intensity. Early results indicate a positive impact of electrification on agricultural outcomes in the earlier decades, which become insignificant in the later periods, indicating that the shift in motivations have implications on the activities for which electricity can be accessed. These results imply an important oversight in the current definition of electricity provision and access measured solely by household electrification. It is likely that by targeting domestic electricity access, governments across the developing world may be overlooking potential income enhancing activities enabled by electrification, thus resulting in null findings when measuring the impact of electrification expansion on incomes.