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General Note
Article is recommended to print as color version in recycled paper. *Save Plants, Save Climate.*

Recent Initiatives in Agriculture: Improving Efficiency in Markets, Energy and Water Use

Dr Stuti Rawat

Agriculture in India is constrained by input as well as output level factors. Recognising the challenges these factors pose against the spectre of climate change, two areas the National Mission for Sustainable Agriculture (NMSA) identifies for action are 'water use efficiency' and 'markets' ("National Mission for Sustainable Agriculture" 2016). This paper takes a detailed look at three recent government initiatives that are targeted at improving efficiency at the input and output side in this regard through their focus on energy, water usage and markets respectively.

Water availability for agricultural users has reached critical levels, with excessive reliance on free or subsidized electricity to pump out groundwater putting a severe strain on electric utilities and state governments (Sankar 2004; Birner et al. 2007). In addition, the current patterns of energy usage make the agricultural sector the second highest contributor to greenhouse gas emissions (Swain and Charnoz 2012). If current trends are to continue it is projected that availability of water for agricultural use in India may be reduced by 21 percent by 2020 (Indian Agricultural Research Institute 2016), while the energy demand for irrigation will grow by 7 percent until 2022, with diesel making up 20 percent of the total irrigation demand ("India Energy Security Scenarios: Demand for Agriculture" 2016). Given the rising population, strained resources, such a scenario will exacerbate existing pressures on the system resulting in lower productivity, production and a detrimental impact on the environment at large. With respect to markets it is recognised that high agricultural crop price dispersion i.e. the variation in price across states (National Sample Survey Office 2014) affects famers' incomes. Moreover farmers face multiple barriers in marketing their produce because of high levels of market charges and movement controls (Press Information Bureau 2016).

Three recent schemes have been introduced by the government that is aimed at tackling these challenges of inefficient energy, water use and inefficient markets. These schemes are the National Energy Efficient Agriculture Pumps Programme (NEAPP), the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) and the National Agriculture Market (NAM) programme. While the first two schemes focus on the input side by targeting energy and water use efficiency, the last scheme targets efficiency in agricultural markets. This paper analyses the potential impact of these schemes, the substantive challenges they face and the policy lessons that can be garnered from other programmes that are relevant for the successful implementation of the current initiatives.

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