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GUEST VIEW

Water security must be ensured for rural India to thrive

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India's agrarian society is at a crucial juncture, seeking to balance traditional livelihoods with modern market dynamics. When compounded by the unpredictable impact of climate change, the uncertainties multiply. With more than half the country's population depending directly or indirectly on agriculture, prosperity and economic growth in the rural sector becomes vital. The average land holding being just about a hectare, nearly 90% of farmers are smallholders and solutions that work for large-holding farmers may not be effective for them. Therefore, urgent policy refinements are needed to ensure people's economic independence and a prosperous rural India. These must include climate resilience, water conservation and sustainable practices to navigate an important transformation.

A significant first step is to recognize that much of agriculture depends on women. With employable young men migrating to urban areas, land tilling and allied businesses in the rural sector are increasingly

being shouldered by women. Based on my travels through rural India, I am delighted to note the immense potential of women's contribution to agriculture. They excel at it and actively organize themselves, assuming leadership and charting their paths. As a slow and steady phenomenon, the "feminisation" of agriculture, explicitly brought out in the *Economic Survey 2017-18*, is now being factored into policy-level thinking. The full potential and economic autonomy of women farmers could be unlocked if we take measures to ease their currently restricted access to knowledge, finance and markets.

While enhancing the agricultural output of small-scale farms has many pieces of a jigsaw puzzle that must fall in place, the largest chunk pertains to water security—the right quantity, at the right time and in the right place. This is not just another problem, but a pressing issue. Water is the flipside of climate change; almost every aspect of it, be it global warming, rising ocean levels or the onslaught of floods and droughts, is linked to water in one way or another.

Water security for agriculture is not just about enhancing overall supply. As we have seen over the past few decades, enhancing year-round supply has led to gross over-extraction of groundwater, and the conse-

quences are there for all to see. A starting point would be to accept and reinforce the knowledge passed on for generations that India's agricultural sector is mainly rain-fed, with all the vagaries of monsoon rainfall. This renders it susceptible to water scarcity and unpredictable precipitation patterns. Incorporating water conservation strategies, such as collecting rainwater, using effective irrigation technologies (like drip and sprinkler systems) and managing watersheds, is crucial to preserve soil moisture and sustain long-term agricultural output. Underlying all these is the need to recharge groundwater—a slow process, but without which we will run the risk of 'overconsuming,' much like spending on a credit card. The bill to repay will follow shortly. These water-efficiency-linked measures will help enhance crop yields by ensuring that crops receive sufficient moisture throughout their growth cycles.

A recent unveiling by the Prime Minister of 109

high-yielding, climate-resilient and bio-fortified crops is a commendable step. So is the call for regenerative agriculture practices, which, simply put, re-invigorate the soil for higher productivity.

These efforts must be accompanied by the availability of contemporary technology and information. Weather forecasts and real-time data can assist farmers make well-informed plantation and harvest choices, and hence help them minimize losses caused by unpredictable factors. Initiatives taken by Hindustan Unilever Foundation (HUF) have

shown how para-agricultural professionals and local cadres can improve productivity by offering technical support and promoting more effective farming methods. Water management practices built into these programmes are expected to enhance the resilience of rural populations to climatic shocks.

India has a large young population, too, well set to reap a demographic dividend. Unless farming

is financially rewarding and exciting, the youth will not be attracted to it. Nothing hooks the youth more than the sense that they are at the cutting-edge of technology. There are opportunities to bring startup-type technology into agriculture and allied fields such as horticulture, animal husbandry and fisheries. These include using Internet of Things-based sensors, micro-geo maps and fine water management methods. The spread of tech-enabled activities in villages can keep the youth engaged throughout the year, and not just during the traditional *kharif* and *rabi* cultivation cycles.

Much thought at the highest levels is needed to make rural India a powerhouse. A comprehensive approach that factors in the active inclusion of women in the economic cycle, makes it exciting for the youth to stay in their villages and fosters startup thinking would be crucial. All this would ensure that each rural community is water secure and water-wise, with an understanding that while the supply and conservation of water must be enhanced, it must also be used efficiently for greater economic prosperity. The recently concluded World Water Week focused on water cooperation for peace and security—which we all need to reflect on.

These are the author's personal views.

QUICK READ

No sustainable path to rural development is possible without water conservation, given our reliance on agriculture, especially as we navigate uncertainties posed by climate change.

With men migrating to urban areas, we must empower women farmers with knowledge, finance and market access, even as we arm the farming sector with technological aids for farming,