

# Panorama

Economy may pick up,  
but job scene grim. P12 ➤➤

## Govts should not blindly promote micro-irrigation schemes

By J Harsha

Water in India has now become a contentious issue due to rise in demand, climate change and growing mismanagement. With erratic rainfall and recurring droughts in 2012, 2015 and 2016, “water saving” has become a high priority for the governments.

As the agriculture sector consumes 80% of freshwater in the country, micro-irrigation – drip and sprinkler irrigation – has been catapulted as a policy priority because drip and sprinkler irrigation deliver water to farms in lesser quantities in contrast to conventional gravity flow irrigation.

But, the over-enthusiasm shown towards micro-irrigation could end up a damp squib because the governments have erred with too many grand assumptions towards success of micro-irrigation. The focus is more on promotion of micro-irrigation than addressing ground realities.

A bubble of widespread optimism has been created regarding micro-irrigation in India that will eventually burst. Micro-irrigation is a complex system of electro-mechanical components that is energy-dependent without which the system does not work.

The Electric Supply Monitoring Initiative of the NGO Prayas reported that in January 2016, out of its 160 monitoring locations across India, about 17% of locations faced more than 30 power supply interruptions. The scenario worsened in April 2016 with 46% of its locations experiencing power cuts for more than 15 hours and power interruptions.

As the crop water requirement in farms neither coincides nor follows the timing of power availability, the effect on crop yield will eventually turn out to be a disincentive to farmers to choose expensive and technology intensive micro-irrigation.

There is declining groundwater amidst energy crisis. Micro-irrigation, no matter how less quantity of water it may deliver, definitely needs source of water. In arid and semi-arid regions such as Karnataka, Telangana, Andhra Pradesh, Tamil Nadu, Maharashtra, Gujarat and Rajasthan, where micro-irrigation is largely being promoted, the primary source of water is groundwater.

The constraints to drawing of water from the ground have already resulted in them being overexploited in arid and semi-arid regions due to fickle power supply. It affects crop water requirements as well as crop



yield thus wiping out the advantage of micro-irrigation. This is another disincentive for farmers.

Landholdings and farm income are also declining. India's operational landholdings show that it has been reduced by half of what it was in the 1960s. It was 2.28 hectare (ha) in 1970-71 and it has nearly halved to 1.16 ha in 2010-11. As on 2010-11, the size of landholding in marginal category and small category (less than 2 ha) constituted 85% of the operational landholdings in the country. Declining landholdings and farm in-

come is a major hurdle for sustenance of micro-irrigation. A study in 2010 by Sachdeva and Chahal showed that the level of income from farms in India does not even cover the consumption expenditure.

Expensive micro-irrigation: Despite government's financial assistance up to the extent of 40-90% of the cost of micro-irrigation, this is a costly initiative for marginal farmers. In some states, financial assistance is conditionally linked with creation of sources of water which is additional burden for a marginal farmer.

Normative cost of installation for micro-sprinkler is Rs 58,900 per ha and Rs 85,200 per ha for mini-sprinkler as per the guidelines of National Mission on Micro-Irrigation. And drip irrigation is even more expensive. The government's financial assistance does not cover the maintenance cost and additional cost of replacement of obsolete components of drip/sprinkler systems such as filters, clogged pipe network, electrical/electronic components, pumps and silted surface tanks.

“Per Drop More Crop” fallacy: The catch phrase “Per Drop More Crop” found in policies and schemes like the Prime Minister Krishi Sinchayee Yojana is scientifically

flawed because it assumes water as the only input that varies crop yields. It hasn't been illustrated in policies or schemes as to how the input of water alone could increase crop yields. In contrast, an article published in Nature titled “Global survey reveals routes to boost crop yields” says that a combination of nutrient management and irrigation is vital for reducing the yield gap of the crops.

### Governance crisis

If every hurdle to micro-irrigation is assumed solved, then comes the governance crisis which is a major bottleneck to deliver service and goods to farmers. Coordination between different levels of governments is vital in delivering the benefits to farmers.

India's micro-irrigation policy often draws inspiration from Israel, the pioneer in micro-irrigation and world's worst water scarce country in West Asia. But, a closer look at the data and statistics reveal that barring water scarcity, India and Israel have nothing in common.

Look at this example: the per capita income of Israel is \$35,329, whereas India's per capita income is \$1,581. The world's governance rank of Israel is 49 in 2011 whereas India ranks 152 in the same year.

In corruption perception index, Israel stands better with rank 37 whereas India ranked 85 in 2014.

Last but not the least, India's deep-rooted social divisions affect delivery of service and goods to farmers belonging to weaker sections as outlined in a study in 2010 by Deshpande and Kerbo that access to resources in rural areas are difficult and slow for weaker sections of the society.

Despite sporadic success stories of micro-irrigation in short term (or promotion of such success by vested interests), the constraints to micro-irrigation in India as outlined in the article are daunting. Unlike Israel, micro-irrigation in India is fraught with several risks.

Therefore, policymakers and planners have to primarily focus on the impediments/bottlenecks for micro-irrigation and devise methods to overcome the same instead of creating a bubble of expectations from micro-irrigation. But when the bubble bursts, it will end up not only a drain on the public exchequer but also impact India's water management in the long-term.

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