A village in Maharashtra farms almost fully with drip irrigation.

Rajendra Patil at his farm pond.

Small cotton farmer Madhukar Sonawane.

More crop per drop

SAVING WATER

JAWAHAR GETS Sharply 750 million litres annual rainfall well below the national average of 1,175 mm. Yet, this village in Seogon taluka of Maharashtra’s Amravati district has the unique distinction of having its entire cultivable area being under drip irrigation.

That perhaps makes it a model worth looking at, just when the current government has launched the Pradhan Mantri Krishi Sinchai Yojana that aims at delivering water to every field (Har Khet Ro Peni) within a Rs 50,000 crore budget outlay over five years.

Drip irrigation coverage extends to over 3,500 acres out of a total agricultural area of around 4,000 acres. That includes 3,000 acres under cotton and 500 acres under horticultural crops like banana, papaya, mango, pineapple, and muskmelon (sweet time), turmeric, and ginger. Daily balance is 500 acre meters, where jowar, maize and other coarse grains are grown, says Rajendra Patil, a 725-acre farmer of Jawahar.

In drip irrigation, the water pumped out from a well is not sent through sand separators and sand/screen filters to remove silt and impurities such as algae or dead plant material. This filtered water is, then, applied to the crop via a network of mainline and sub-mainline pipes, valves (that turn on or off the water flow), and smaller diameter poly tubes or “laterals,” which have pre-installed emitters at spaces corresponding with the placement of each plant. These ensure delivery of water directly to each plant’s root zone (where it is really required) and at discharge rates as low as one liter per hour.

Drip irrigation systems also have provision for “fertilization” — application of fertilizer in liquidized form from a separate tank along with the water.

“Drip irrigation works well in cotton, where only one litre of water per plant per day (lppd) is needed for the first 40 days. Taking a plant population of 5,000 per acre, it comes to 5,000 litres or operating a 5-horsepower motor power for just 15 minutes daily,” notes VV Patil, senior manager (agri marketing and agriculture extension) at Jain Irrigation Systems Ltd [JISL].

The irrigation requirement is higher in the subsequent stages of bud or square initiation (40-60 days; 2-3 litres lppd), flowering (60-90 days; 3-5 litres lppd), and development (90-120 days; 7 litres lppd).

Rajendra Patil’s well produces 800 litters per day, which is adequate. He installed a control box, which helps him manage water delivered from the well. Patil claims he is saving 90% of water as compared to the traditional irrigation methods.

NABARD JAMKAR has technology plus. “Jain Irrigation System Ltd. has brought excellent technology. They have a control box which is undergone 3,500-acre project, which will save 90% water,” Patil.

“According to Bhasawat Jain, chairman of the Rs 665 crores JISL, the world’s second largest micro-irrigation company after Israel’s Netafim, water harvested through building of check dams and ponds, extracted by borewells, and delivered to crops using drip irrigation will cost twice the prices than that from large storage dams,” Patil.

“Drip irrigation also provides assurance irrigation to every farm, more so when large droughts in 125 years to build and entail huge land acquisition and community displacement costs. Ultimately, water has to be measured, motored, priced and managed along with crop planning in order to cover more area and maximum number of farmers,” he points out.
A different banana republic

The story of how Jhagaon district in Maharashtra has become the world's seventh largest producer of the fruit if we were a 'country'